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THESIS

SELECTING THE BRIGADE LEADERSHIP AT THE UNITED STATES NAVAL ACADEMY: WHO ARE THE STRIPERS?

by

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June 2003

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This thesis examines the process of selecting the midshipmen leadership, or "stripers," at the United States Naval Academy. Using a qualitative approach, it gathers data from the current cohort of decision makers who select the stripers each semester regarding what they believe to be the desirable and undesirable qualities of striper candidates. Shifting to a quantitative approach, those qualities are then used to create variables using data from the Naval Academy classes of 1999 through 2002. A logistic regression is then estimated with the purpose of gauging if those qualities are, in fact, represented in the selectees. A model is presented which indicates that, by and large, the goals of the selection process are being met. Recommendations for minor policy adjustments and for further research are made based on the findings of both the qualitative and quantitative data.

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SELECTING THE BRIGADE LEADERSHIP AT THE UNITED STATES NAVAL ACADEMY: WHO ARE THE STRIPERS?

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I.   INTRODUCTION

A.   BACKGROUND

The United States Naval Academy has been the preeminent institution for preparing young adults for commissioned service in the United States Navy since 1845. Originally called the "Naval School," it was created at the site of the Army's Fort Severn, a 9-acre tract of land in Annapolis, Maryland, at the direction of Secretary of the Navy George Bancroft.   The original staff included the new Superintendent, Commander Franklin Buchanan, and seven instructors composed of three civilians and four naval officers.   There were about 50 "Naval Cadets," as they were called, in the first class.

Today, the Brigade of Midshipmen has grown to more than 4,200 students and a staff that numbers around 3,000.   Each year, approximately 900 to 1,000 new Ensigns and 2nd Lieutenants are commissioned into the U.S. Navy and Marine Corps as well as several other services, both U.S. and foreign.

The formal mission of the Naval Academy is

> To develop midshipmen morally, mentally, and physically and to imbue them with the highest ideals of duty, honor and loyalty in order to provide graduates who are dedicated to a career of naval service and have potential for future development in mind and character to assume the highest responsibilities of command, citizenship, and government. (Reef Points, 1994, p. 7)

A component of fulfilling this mission is to select members of the brigade to fill positions of leadership over their peers and the junior classes.   The practice dates back to the earliest days of the Naval Academy.   Originally, the midshipmen were divided into two groups, the "oldsters" and the "youngsters."   The top leader, called the "Cadet Adjutant," was selected as the "best" amongst his peers, although exactly what that meant at the time is unknown.   Midshipman Edwin O. Carnes is believed to have been the first to hold this position.   It was also apparently a common practice to create and dissolve billets at will for cadets who the administration felt should be rewarded with leadership positions.   At other points, selection to leadership positions was largely arbitrary, although sometime grades would be taken into consideration (Benjamin, 1900).

Park Benjamin describes the role of the Cadet Adjutant in this way:

> The adjutant was not the presiding officer at formation, as he subsequently became, and as is the cadet lieutenant-commander of the present day, but was rather an adjutant in the strict military sense of the term, as is the cadet officer now holding that position at the Naval Academy. The officer in charge of the battalion at formations of every kind was Professor Lockwood, who acted as colonel (Benjamin, 1900, p. 194).

Midshipmen were then divided into gun crews and mess crews, which also had nominal midshipmen in charge, but the general idea seems to be that they had no real authority. In 1857, Lieutenant C. R. P. Rogers, Commandant of Midshipmen, would make a lasting change intended to adjust that reality. He instituted specific privileges for the first class midshipmen, specifically for the purposed of creating a "quasi- aristocracy" that he hoped would "lead the students to enforce discipline upon each other" (Benjamin, 1900, p.219). This practice continues today, with much the same objective.

Today, a "Midshipman Captain" commands the "Brigade of Midshipmen" that is divided into a distinct four-class system where the seniors, or First Class (abbreviate 1/C), are in charge. The Brigade is divided into two regiments, six battalions, and thirty companies. The battalions are commanded by Midshipmen Lieutenant Commanders, and the Companies by Midshipmen Lieutenants, just as they were in 1869 following the American Civil War. A Midshipman Commander fills the position of Regimental Commander. There is also a large "supporting staff" of Midshipmen for each unit commander, such as Executive Officer (or "XO"), Operations Officer, and Administrative Officer. The selection process, which is the focus of this thesis, is far from arbitrary. Together, the midshipmen that fill these leadership positions within the brigade are known as "stripers" for the distinctive stripes they wear on their uniforms. This practice is also steeped in tradition. It dates back to the first uniforms at the Naval Academy in 1850, when cadets who filled leadership positions would wear distinctive cords on their uniforms denoting their ranks.

The striper positions are not limited to the 1/C. There are also some positions available to the juniors, or second class (2/C) midshipmen; they fill roles parallel to the unit Sergeants Major in the Marine Corps. They do not currently wear any distinctive

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uniform markings, although they have in the past. They do currently undergo the same selective screening process that the 1/C stripers do. Not surprisingly, many of them also go on to fill the higher leadership roles in their first class years, or in the parlance of the administration, they are often the ones to get the "big stripes."

B.   PURPOSE: THE RESEARCH QUESTIONS

The main purpose of this research is to analyze the process currently in use to select the midshipmen designated as stripers. The primary research question is: "How well is the striper selection process meeting its stated goals for selecting the leadership of the Brigade of Midshipmen?" We also address the following four secondary questions:

1.   How Does the Current Selection Process Work?

Commandant of Midshipmen Instruction, or "COMDTMIDNINST," 1601.12 of October 4, 1996 formally defines the process that is in place to select stripers. However, a basic inspection of the process would quickly reveal that there are currently several deviations from the written procedures. Further, COMDTMIDNINST 1601.12 only carefully defines the process at the Brigade Level; it is vague in explaining how Company and Battalion Officers should select their striper candidates. It does not explain what they should look for in terms of personal qualities or characteristics of the candidates, either. Therefore, using various survey and interview methods, we seek to explain the process used at all levels to find the midshipmen who will rise to the top of the brigade leadership.

2.   What are the Written and Unwritten Selection Criteria to Become a Striper?

There is no formal, written documentation in place to describe what type of person decision makers should considered for selection as a striper. Therefore, we aim to determine what criteria the current decision makers at the Naval Academy use to define a highly qualified candidate. We accomplish this using survey and interview methods.

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3. Using Multivariate Regression, Can We Model the Striper Selection Process Based on the Identified Criteria?

We have obtained data from the U.S. Naval Academy Department of Institution Research that represents the Naval Academy classes of 1999 though 2002. We will use this data to develop and propose a multivariate logistic regression model using the selection criteria identified in answering Question 2. We will discuss the effectiveness of this model using various statistical analysis tools. However, the relatively low striper selection rate—about 5% of each class—will likely constrain its effectiveness

4. What are the Strengths and Weaknesses the Striper Selection Process?

We compare the results of the model against the stated objectives for selecting stripers, as well as the information obtained from the interviews and surveys. Based on the nature and consistency of the results, we will make recommendations for possible process improvements.

C. METHODOLOGY

We combine various approaches and methods to answer the above questions. To assess the selection process, we gather preliminary data by combining formal and informal interviews and conversations with subject matter experts and those integral to the process, surveys that employ yes/no responses and open-ended questions, non-participant observational techniques to explore the selection process at the Brigade Selection Board. We analyze these preliminary data sources to define the selection process currently in place, compare it with governing written instructions, and most importantly, identify the qualities of the stripers as valued by decision makers.

For the statistical analysis portion of this thesis, we obtained historic data from the Office of Institutional Research at the United States Naval Academy, representing the midshipmen of the classes of 1999 through 2002. Following a discussion of the descriptive statistics that relate to this data, we build a multivariate logit regression to

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model the striper selection process. We chose a logit regression due to the binomial nature of the dependent variable; a midshipman is either selected to be a striper, or not.

The final portion of this research is a comparison of the stated selection criteria for stripers and the coefficients of the independent variables in the model that describes them.

D.   SCOPE, LIMITATIONS, AND ASSUMPTIONS

We focus on the stripers selected to lead the Brigade of Midshipmen from the fall semester of the 1999 academic year through the spring semester of the 2002 academic year. The sample includes 3,822 midshipmen believed to be eligible for stripes at the end of their second-class (junior) year during this period. Chapter III explains the various decisions and related reasoning connected to the setting of these two cut-points.

We explore only the process by which stripers are selected and how well the selected midshipmen match the stated goals of that process, and not the effectiveness of the entire striper program. Specifically, we do not address issues related to the numbers or defined roles of stripers, nor do we address any issues related to the performance or success of individuals once they are selected to be stripers. In addition, although we discuss various issues of concern to the Naval Academy, we do not aim to provide a definitive answer as to whether biases for or against any specific demographic group may or may not exist.

The primary limitation in answering the first two research questions is that we were able only to interview or survey the decision makers selecting the stripers at the time of writing, although the data covers the preceding four academic years. This leads to our basic assumption that the objectives of and the process for selecting the stripers has not changed significantly in the previous four to six years. Mr. Ron Hawkins, the civilian Assistant Performance Officer who has helped to administer the process for the last 30 years coupled with a cursory examination of the governing instructions dating back to 1977 supported this assumption (R. Hawkins, Personal Communication, January 22, 2003).

E.   ORGANIZATION OF STUDY

Chapter II reviews prior studies that relate to the striper selection process. From there, it investigates what the relevant literature says about selecting people to fill leadership roles in an organization. There is a long-standing debate concerning the use of traits in the prediction of potential leaders. The debate is not only over which traits are the best predictors, but also whether or not trait-based prediction is justifiable at all. Some believe that leaders will naturally emerge in a group, and trying to predict whom they will be is a fruitless endeavor. Chapter II then explores some of the common traits thought to be essential in trait-based theories. It will then examine the current written instructions that govern the striper selection process at the U. S. Naval Academy. The Chapter concludes with a review of the literature supporting the methodology used in the thesis.

Chapter III presents the qualitative data obtained from surveys, interviews, and non-participant observation. From that data, certain measurable traits emerge that can be incorporated into a multivariate model, as well as some that cannot be easily quantified, measured, or even recorded.

Chapter IV continues with the presentation of the archival data from the U.S. Naval Academy's Office of Institutional Research. More specifically, it explains the construction of the variables to be used in a proposed multivariate model, and examines various descriptive statistics that relate to those variables.

Chapter V builds a proposed multivariate model based on the measurable traits identified and quantified in Chapters III and IV. The model is meant to be used as a descriptive as opposed to a predictive one, given the relatively small proportion of midshipmen who are selected to be stripers compared to the total number of midshipmen in a graduating class.

The description of the stripers as a group are then compared to the stated goals of the selection process discussed in Chapter III as one possible measure of the effectiveness

of the selection process. This comparison forms the basis for Chapter VI, which primarily will focus on identifying several strengths and weaknesses of the selection process. Several recommendations for improvement in the program and for further research are also included.

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II.   LITERATURE REVIEW: SELECTING LEADERS

A.   RESEARCH CONCERNING NAVAL ACADEMY STRIPERS

Two theses by Mathew Reardon (1997) and Eric Micheli (1998) examined, among other things, how stripers fared in the Navy following graduation. Reardon found that having held a striper position was not a significant predictor of becoming a careerist, which he defined as passing the Lieutenant Commander [O-4] Promotion Board and remaining in an unrestricted line community. Currently, the majority of officers who desire promotion to O-4 and remain on active duty do, and this has been a consistent trend for the last several years (S. Cowan and M. Gonzalez, Personal Communication, February 8, 2003). Essentially, he concluded that graduation serves as a leveling ground for all Midshipmen, and desire may be what primarily sets apart a successful selectee.

Micheli, however, suggests a different twist on the future performance of stripers. He defined success as promotion at the Commander [O-5] Promotion Board. It is a large and wholly unrealistic jump to think there is a strong—if any—causal relationship between being a striper and promotion to commander, especially given the passage of time and complex nature that Promotion Board. However, it *is* reasonable to infer that the O-5 Promotion Board is likely looking for the same general *type* of high-achieving person as the striper selection board.

Micheli (1998) and Reardon (1997) found that there might have been a tendency for women and minorities to select at a lower rate for striper positions. Because his research focused on the O-5 boards, it was necessary to "reach back" to USNA classes of the early 1980s for striper data. The lower selection rate for women then does not come as too much of a surprise, since women had just been admitted to the Naval Academy. He suggested other possibilities to explain his observed lower selection rate for minorities. There was a strong positive correlation between high academic standing and military and striper selection in his data, and a comparably weak negative correlation between being part of an ethnic minority and having a high academic standing.

Both Micheli (1998) and Reardon (1997) assessed striper selection as one possible operational definition of leadership potential. It follows then that the striper

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selection process may be identifying that potential on two levels. At the surface, it is obviously looking at the present in selecting the actual leadership of Brigade of Midshipmen. The second level, based largely on Micheli's findings, is that the striper selection process, while it probably does not *predict* whom the future senior leaders of the Navy are, it may at least be an early identification of potential future leaders. There is also the possibility of successful striper selection creating a "halo effect" of sorts for the individual (Thorndike, 1920). Even if this level is only partially valid, its existence should create a strong desire on the part of the Naval Academy to ensure the striper selection process is the best it can be by subjecting it to frequent and rigorous examination.

B. WHY TRY TO CHOOSE ANYWAY?

Numerous studies link military performance assessments to future performance in the fleet when defined as promotability (Bass 1990). Micheli cites a study by Yamarino and Bass (1989, no further citation provided) that stipulates that this particularly holds true for Midshipman Performance Assessments. However, one might be inclined to wonder why you would even try to identify potential leaders. Freeman and Taylor (1950) essentially answered this question simply by saying the trial and error method of finding out who good leaders are is not an efficient way to run a business. In other words, a crisis is not the time you want to find out that a randomly selected "leader" is incapable of leading. Further, according to Jack Taylor (1962), if the pool of potential above-average leaders is so small—15% according to him—but the entire population *thinks* that they are in that 15%, then there needs to be some method for figuring out who the top 15% *really* are. Eitelberg, Laurence, and Brown (1992) extended this concept to the military, observing that military officers are a tremendous capital investment placed in positions of extraordinary responsibility.

The conscious study of the notion of identifying promising youth and essentially "grooming" them for future leadership roles is not a new one; it has been around since at least 1938, when Arthur Jones expressed it in his book titled *The Education of Youth for Leadership* (p. 29). Micheli (1998) offered evidence that leadership ability as a

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midshipman, when measured as the propensity for selection as a striper, can be a moderately strong predictor in identifying future leaders. If the bigger picture is that the Naval Academy might be measuring an individual's pre-disposition towards becoming a successful—or at least promotable--leader, it would be ideal to believe that the striper selection process is in turn picking the midshipman to be stripers, and the process is in itself fair. Although there is a strong sentiment at the Naval Academy that the selection process "picks the 'best' midshipman to be stripers," it is empirically unknown if the stated goals of the striper selection process are in fact being met (A. Person, Personal Communication, July 26, 2002).

C.   LEADERSHIP TRAITS

History presents several different views of how to use an individual's traits to identify the makings of a good leader. For example, Horne (1970) lists 33 personality traits that all leaders should posses. Jones (1938) created a composite list of what three experts deemed to be important personality traits of a good leader. Although there is a good deal of crossover between even these two lists, only "cognitive ability" matched any traits currently measured at the Naval Academy.

In 1974, Stogdill put forth the idea that there was very little evidence to support the trait-theory approach to identifying leadership potential (Lau, 1998). However, by 1980 Bass concluded the opposite was true, and that "good" leaders tended to share ten common traits (Lau, 1998). Lau succinctly suggests that the change in attitudes toward trait theory throughout history is the result of advances of measurement techniques of the different potential traits. Bartone, Snook, and Tremble (2002) provide further explanation of this trend by citing a meta-analysis by Lord, DeVader, and Alliger in 1986 that further suggested shortfalls of early trait research were the result of research design and execution problems. Lau (1998) does conclude that all leaders at least seem to *share* some common traits.

Bartone, Snook, and Tremble (2002) further enter the subject of trait theory by exploring a long-standing debate between cognitive and personality models. They point to the reemergence of personality theories resulting from continued development of new

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measurement instruments and techniques. They stipulate that personality-based models were abandoned for a period based on a belief that they did not appear to predict leadership potential very well, although they did seem to be able to distinguish good leaders from bad for those already in leadership positions. Using the military performance grade given to cadets at the U.S. Military Academy as their dependent variable, they combined both various personality and cognitive measures to produce a moderately successful model that predicted leadership performance in cadets.

Zazanis, Zaccaro, and Kilcullen (2001) take a different view from the idea of using an individual's specific traits to predict leadership potential. Citing at least fifteen different studies, they assert that peer evaluations are more reliable in identifying various measures of success in job performance particularly in the military, vis-à-vis leadership success. Further, they state that

> ...studies comparing peer evaluations to other methods of assessment found that peer evaluation were more highly predictive of future performance than measures such as military course grades (O'Connor & Berkshire, 1958), instructor rating (Kraut, 1975; Wherry & Fryer, 1949), and supervisor ratings (Williams & Leavitt, 1947). (p. 74, quoted citations not provided by this thesis)

The Naval Academy does not currently use a peer evaluation system to assess military performance. However, a system is in a trial-testing phase in several of the Companies within the Brigade of Midshipmen. (A. Person, Personal Communication, December 2002). Additionally, the striper selection process will likely incorporate this peer evaluation system once fully implemented (R. Hawkins, Personal Communication, January 22, 2003).

Assuming Lau's (1998) affirmation of trait-modeling theory is correct, then it should be possible to model leadership potential specifically at the Naval Academy using some combination of traits. Bartone et al (2002) have shown that cognitive ability and personality measures can predict leadership performance at another U.S. service academy. Micheli (1998) suggested that having held a substantial leadership position might also predict future leadership potential. It is reasonable to expect that some combination of cognitive ability and proven military performance will not only model

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leadership potential at a service academy, but also leadership selection. Zazanis et al (2001) would likely argue that the inclusion of peer reviews are also a necessary portion of any proposed model of leadership potential and selection, however this is not currently feasible at the Naval Academy for reasons stated.

From here we explain the formalized process of selecting the brigade leadership at the Naval Academy. This understanding is important before the process itself can be statistically modeled and analyzed

D.   COMMANDANT OF MIDSHIPMEN INSTRUCTION 1601.12 AND OTHER PRINTED INSTRUCTIONS

The principal written instruction that governs the process of selecting the brigade leadership each semester is Commandant of Midshipmen Instruction,[1] 1601.12 of 4 October 1996, entitled "Brigade Striper Organization and Selection Procedures." Commandant of Midshipmen Notices[2] tailor the instruction each semester to modify the process as necessary, set completion dates for each major step, and assign responsibilities for completing them. U.S. Naval Academy Instruction[3] 1610.3F, the Honor Concept of the Brigade of Midshipmen, defines the procedure for selecting the senior members of the Honor Staff. This section discusses the current organization of the stripers and a description of the delineated method for selecting them.

1.   The Striper Organization

The Brigade of Midshipmen is currently authorized a strength of 4,200 midshipmen. The brigade is divided into two regiments. Each regiment is then divided into three Battalions, for a total of six. Each Battalion contains five companies, for a total of 30 in the entire brigade. Each company has approximately 140 midshipmen in it.

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[1] Abbreviated COMDTMIDNINST.

[2] In Naval Parlance, an "instruction" is intended to be a permanent standing order that details a specific program or process. A "notice" is meant to be short-term order, not to exceed one year in duration, that is used to temporarily modify an instruction or provide guidance for a one-time event.

[3] Abbreviated USNAINST

Each of the above units has a unit commander, each of whom serves a term of one semester. The Brigade Commander holds the rank of Midshipman Captain, and wears six thin stripes on his sleeve to denote his rank, hence the term "six-striper." Two Midshipman Commanders are in charge of each of the regiments, and they wear five thin stripes, making them "five stripers." The six Battalion Commanders are Midshipman Lieutenant Commanders or "four stripers," and so on.

Each unit commander also has a staff. The more senior the unit commander, the larger and more senior his or her staff will be. For example, the Brigade Commander has the largest staff. His or her principal deputy, the Brigade Executive Officer, holds the rank of Midshipman Commander. In terms of uniform appearance, he or she would be indistinguishable from the Regimental Commander. The Brigade Staff is comprised primarily of five- and four-stripers, although there are also some three-stripers. A similar pattern follows for the subordinate staffs. Figure 1 (page 15) is a wire diagram of the basic operational midshipman chain of command.

In addition to the above operational billets, there are also "specialty billets" within the striper organization. The Deputy Commandant of Midshipmen describes these as "administrative billets" (Personal Communication, February 20, 2003). These billets are the most difficult to describe. The accompanying rank that comes with any given billet occasionally changes, while other billets are often created or dissolved (R. Hawkins, Personal Communication, January 22, 2003). For example, a recently created billet is the head of the Naval Academy Foreign Affairs Conference (NAFAC), who is now a four-striper. Another is the Brigade Physical Mission Officer, who serves primarily as a liaison with the Physical Education Department. He or she is also a four-striper, and considered part of the Brigade Staff.

Most of these types of billets fall under the authority of the operations officer of each respective staff. However, they also have a "direct line." For example, the Company Sexual Assault Victim Intervention Representative (or SAVI, another administrative billet) reports directly to the Battalion SAVI, who in turn reports to the Brigade SAVI. Each of them also reports to his or her respective unit commanders at the same time. This is only one example of many complex organizational relationships.

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Figure 1.   The Brigade Chain of Command

BRIGADE CHAIN OF COMMAND
NOTE: ( ) DESIGNATES NUMBER OF STRIPES FOR BILLET

```
                        COMMANDANT OF
                          MIDSHIPMEN
                              |
                          BRIGADE
                      COMMANDER (6)
                              |
   ┌──────────┬──────────┬──────────┬──────────┬──────────┐
 HONOR        OPS      BRIGADE   CHIEF STAFF  BRIGADE SGT
CHAIRMAN (5) OFFICER(5) XO (5)   OFFICER (5)  MAJOR (2/C)
                              
           ┌──────────────┐              ┌──────────────┐
         1ST REGT                      2ND REGT
         CDR (5)                       CDR (5)
            |                             |
   ┌────────┼────────┐          ┌────────┼────────┐
 1ST BN   2ND BN   3RD BN     4TH BN   5TH BN   6TH BN
 CDR (4)  CDR (4)  CDR (4)    CDR (4)  CDR (4)  CDR (4)

 ┌───────┬───────┬───────┬───────┐
1ST CO  2ND CO  3RD CO  4TH CO  5TH CO
CDR (3) CDR (3) CDR (3) CDR (3) CDR (3)

 ┌───────────┬───────────┬───────────┐
1ST PLATOON 2ND PLATOON 3RD PLATOON 4TH PLATOON
   (2)         (2)         (2)         (2)

 ┌──────────┬──────────┐
1ST SQUAD 2ND SQUAD 3RD SQUAD
   (1)       (1)       (1)
```

Source: COMDNMIDNINST 1601.12 of 4 OCT 96, Encl (1).

A third component of the striper organization is the Brigade Honor Staff. Each member of this staff serves a term of one academic year. The Brigade elects the honor staff, but a senior member of the Commandant's Staff confirms their election. The head of the Honor Staff is the Honor Chairman, who is a Midshipman Commander. The four stripers working for him or her are the Vice Chairman, the Deputy Chair for Education, and the Deputy Chairman for Investigation. There are also three-striper staff positions at the brigade level, and numerous battalion and company level positions. The Honor Staff functions almost completely independently of any other Midshipmen Chain of Command. The exception is the Honor Chairman, who reports directly to the Brigade Commander.

The fourth and final component of the striper organization is the 2/C Chain of Command, or each unit commander's Sergeant Major. Its purpose is similar to that of the enlisted leadership in a traditional military unit. They serve as liaisons between the under

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classes and the striper organization, handle many of the routine administrative jobs such as musters, and provide a secondary conduit for the flow of information. It mirrors the 1/C chain of command. I.E., the brigade staff has a Brigade Sergeant Major; each regiment has a Regimental Sergeant Major, and so on. These midshipmen do not currently wear any distinctive insignia on their uniforms, although they have at times in the past.

Figure 2 (pages 17-18) is a list of all command and staff positions for the first and second class midshipmen within the Brigade of Midshipmen at the Naval Academy. Note the source is COMDTMIDNINST 1601.12 of October 4, 1996, and therefore may not necessarily reflect subsequent changes to this list in the intervening years, although this is still the current in-force directive.

2. Selecting the Stripers

The semi-annual selection process begins early in each semester with the release of a Commandant of Midshipmen Notice. This notice details the timeline, provides the current list of billets being selected for, and identifies specific actions to be taken by individuals in executing the process if they differ from the standing instruction.

The instruction directs the 30 Company Officers to convene a Company Striper Board to select nominees from their companies. It is to be comprised of the Company Officer as the senior member, the Company Senior Enlisted Advisor, and the Company Commander or Executive Officer. For selecting the nominees for the Fall Semester, it is to include both the current and the previous Company Commanders and/or Executive Officers. Each member has one vote, with the senior member having three. Each Company selects three candidates for Midshipmen CAPT/CDR/LCDR billets, and one candidate for the position of Brigade Sergeant Major.

Figure 2.   Naval Academy Command and Staff Billets by Rank

RANK	TITLE	NO. OF BILLETS
MIDN CAPTAIN	Brigade Commander	1
MIDN COMMANDER	Brigade Executive Officer	1
	Chief Staff Officer	1
	Brigade Operations Officer	1
	*Brigade Honor Committee Chairman	1
	Regimental Commander	2
MIDN LCDR	Brigade Maintenance Officer	1
	Brigade Adjutant	1
	Brigade Administrative Officer	1
	*Brigade Training Officer	1
	*Brigade Honor Committee Vice Chairman	1
	*Brigade Honor Committee Vice Chairman for Education	1
	*Brigade Honor Committee Vice Chairman for Investigations	1
	Regimental Executive Officer	2
	Regimental Operations Officer	2
	Battalion Commander	6
MIDN LIEUTENANT	Brigade Assistant Operations	2
	Brigade Assistant Operations (Athletics)	1
	*Brigade Assistant Operations (Drill)	1
	Brigade Supply Officer	1
	Brigade Academic Officer	1
	*Brigade MIS Liaison Officer	2
	*Brigade Honor Coordinator	1
	*Brigade Honor Committee Secretary	1
	*Brigade Honor Committee Academic Liaison	1
	Drum and Bugle Corps Commander	1
	Regimental Maintenance Officer	2
	Regimental Adjutant	2
	Regimental Administrative Officer	2
	Battalion Executive Officer	6
	Battalion Training Officer	6
	Battalion Operations Officer	6
	Yard Patrol Squadron Commodore	1
	Company Commander	30
	In-season Varsity Sports Team Captains	0
MIDN LT(j.g.)	*Brigade Parade Judge	1
	Brigade Intramural Officer	1
	Brigade Assistant Adjutant	1
	Drum and Bugle Corps Executive Officer	1
MIDN LT(j.g.) (cont'd)	Drum and Bugle Corps Operations Officer	1
	Battalion Maintenance Officer	6

RANK	TITLE	NO. OF BILLETS
	Battalion Administrative Officer	6
	Battalion Honor Representative	6
	Battalion Adjutant	6
	Battalion Drug and Alcohol Program Advisor	6
	Battalion Drill Officer	6
	Yard Patrol Squadron Vice Commodore	1
	Company Executive Officer	30
	Company Platoon Commander	120
	Company Operations Officer	30
MIDN ENSIGN	Company Administrative Officer	30
	Company Training Officer	30
	Company Squad Leader	360
	Company Maintenance Officer	30
MIDN IN RANKS	Company Wardroom Representative	30
	Company Security Officer	30
	Company Academic Officer	30
	Company Physical Education Officer	30
	Company Drill Officer	30
	Company Conduct Officer	30
	Company Adjutant	30
	Company Drug and Alcohol Program Advisor	30
SGTMAJ (2/C)	Brigade Sergeant Major	1
	Regimental Sergeant Major	2
	Battalion Sergeant Major	6
1STSGT (2/C)	Company First Sergeant	30
SGT (2/C)	Platoon Sergeant	120
	Brigade Drill Sergeant	1
	Brigade Parade Sergeant	1
	Battalion Admin Chief	6
	Battalion Drill Sergeant	6
	*Company Drill Sergeant	30

* Denotes a year-long (2 semester) billet.
Source: COMDTMIDNINST 1601.12 of 4 OCT 96, pp 3-4.

The procedure for Battalion Officers is similar. The instruction denotes that the board should be comprised of the Battalion Officer as the Senior Member, three Company Officers, the Battalion Commander or Executive Officer, and two Company Commanders. It also specifically states, "The Company Officers and Company Commanders should be from different Companies to ensure complete representation (p. 5)." The Battalion Senior Enlisted Advisor shall serve as advisor to the board, but will

not be entitled to a vote. All members have one vote, except the Senior Member, who has two. Each battalion selection board is to select eight candidates for Midshipmen CAPT/CDR/LCDR billets, and one for the position of Brigade Sergeant Major. At the conclusion of the Board, each Battalion sends 15 copies of each candidate's performance records and Company Officer recommendations to the performance office for processing prior to the commencement of the brigade board. Updated technology, however, has eliminated this requirement.

The Brigade Striper Board, which actually selects the nominees to fill Midshipman CAPT/CDR/LCDR billets, is comprised of the Deputy Commandant as the senior member, the six Battalion Officers, the Brigade Commander, and an additional Midshipman Commander from the Brigade or Regimental Staff. Each has one vote, with the exception of the senior member, who has two. The Brigade Performance Officer serves as a non-voting recorder. In addition, according to the instruction the Brigade Master Chief attends the board as an advisor but does not vote. Company Officers and Senior Enlisted Advisors may attend the proceedings, but may not vote.

The instruction includes a ranking sheet for each member of the selection board in ranking the candidates in such areas as "Appearance/Poise," "Leadership," "Command Presence," "Communication Skills," and in their answers to three questions (Encl (9), p. 1). It also provides space to note the company of each candidate, his or her cumulative GPA, and any comments. Upon completion of the interviews, each member of the board is to forward his or her ranking sheets to the recorder for compilation and a total ranking as a group. The board then slates the candidates into specific billets based on the results of this list.

The instruction also provides guidance for selecting three types of the specialty billets: the Honor Staff, the Midshipmen Information System Liaison Officer (MISLO), and the Drum and Bugle Corps Staffs. The 1601.12 instruction provides basic guidance on where the slates for these positions is to come from, but does explicitly state that the Brigade Striper Board is to approve them. USNAINST 1610.3F provides detailed guidance for the selection of the honor staff, and is explained below. The MISLO, who serves as the Information Technology representative for the brigade, is taken from a pool

of six candidates—one from each Battalion—that has been ranked by the Midshipmen Information Service Officer. The Brigade Striper Board is to interview candidates for the Honor Staff and MISLO prior to approval. A striper board convened by the Drum and Bugle Corp's Officer Representative selects the nominees for its staff positions. The Brigade Striper Board does not interview them prior to their approval in those positions.

Following the selection and slating process, the list of striper nominees is forwarded to the Commandant of Midshipmen and Superintendent for final approval. Following approval, the list circulates between the Battalion Officers to oversee the selection of Battalion Staffs, the Company Commanders and their staffs, and the Brigade and Regimental three-striper and below positions. Each semester, the battalions are assigned the responsibility of selecting the brigade and regimental three-stripers and below on a rotating basis to ensure the fair distribution of the leadership positions across the battalions. This procedure also aids in the guarding against cronyism within the upper levels of the midshipmen leadership organization.

3. Commandant of Midshipmen Notices

There have been several significant modifications to COMDTMIDNINST 1601.12 by various Notices in addition to their more routine purpose of addressing time lines and responsibilities. Note however, that were unable to locate historic notices prior to October 5, 2001, which related to the selection of the stripers for the Spring Semester of the 2002 Academic year.

The most significant change instituted via instruction has been in the number of nominees each Battalion Board provides to the brigade board. The October 2001 notice requires six nominees per Battalion. We could not reliably ascertained when this change was instituted. The number was further reduced to four per battalion for the Fall Semester of the Fall Semester of the 2003 Academic Year. There were two primary reasons for this decision according to Captain Gregory Parker, USN, the Deputy Commandant of Midshipmen. First, the boards had grown unreasonably long, typically taking up three full workdays. They now take approximately two half-days. Second, by having a slate of 24 candidates to fill 21 four-, five-, and six-striper billets, the Battalion

Officers who create that initial slate are given more authority and autonomy to actually select those that are going be stripers. Therefore, the Brigade Striper Board has moved from a "selection and slating" process to one that is more purely just "slating."

A second change has been the inclusion of inputs from Officer Representatives of Sports Teams and Extra Curricular Activities directly to the Performance Officer for Brigade Striper Positions. The Aptitude for Commission Officer collects all of the inputs and redistributes them to the Battalion Officers. Ron Hawkins reports that this change was made in an effort to counter a perception that members of sports teams are at a disadvantage for being selected to fill Brigade Striper Positions. This perception makes sense since Company Officers typically do not see members of varsity sports teams, and therefore they may not be as likely to be "noticed." However, there is no statistical basis for this assumption.

Lieutenant Niels Olson, the current Brigade Aptitude for Commission Officer, reports 16 of the approximately 100 Officer Representatives took advantage of this ability in the latest round of selections. They recommended 64 candidates for the consideration of the board selecting the stripers for the fall semester of the 2004 academic year. The Company Officers (not the Battalion Officers as the instruction directs) receive all 64 candidate's names for consideration. Three of those 64 actually appeared before the Brigade Striper Board.

The final modifications made by notices refer to specialty billets. For example, the most recent notice includes criteria for the selection of the Brigade Alcohol and Drug Education Officer (ADEO), a three-striper billet. The Commandant's ADEO, a Navy Lieutenant, presents the nominee and two alternates to the Selection Board.

4. Selecting the Honor Staff

The selection process for the Honor Staff comes from U.S. Naval Academy Instruction 1610.3F, the Honor Concept of the Brigade of Midshipmen. Unlike the striper organization, members of the brigade elect the honor staff. This is in keeping with the ideal that the honor system at the Naval Academy is entirely run by Midshipmen. There is some oversight in the process, however.

The process begins with a general solicitation to all members of the rising first class requesting volunteers to be a part of the staff. An interested midshipman submits his or her name to their Company Officer. If the Company Officer endorses the candidate, they prepare a summary sheet for review by the Battalion Officers. The summary sheets then pass to the Commandant's Ethics Advisor. He and the current Honor Chairman approve the list of candidates, and then submit it to a panel comprised of the 60 2/c Company Honor Representatives, who vote on a slate of 10 to 15 nominees to fill the seven staff positions. Although not directed in the instruction, each candidate gives a five-minute presentation to the panel. It then calls for a Striper Board to slate these Midshipmen into the specific billets, implying it is the same board that selects the brigade stripers. However, it does not explicitly state this.

E. RESEARCH METHODOLOGY

With the formal, written process itself understood, we undertook the challenge of determining how best to assess its effectiveness. A "process evaluation" best describes what we present in this thesis. According to Patton (1987), a process evaluation is

> [A]imed at elucidating and understanding the internal dynamics of program operations... [t]he process evaluator sets out to understand and document the day-to-day reality of the programs under study. The evaluator tries to unravel what is actually happening in a program in a search for major patterns and important nuances that give the program its character. (pp 23-24)

To assess this complex process, we undertook a two-pronged approach, combining qualitative and quantitative research methods. We used the qualitative prong to assess what the decision makers—those officers who are directly involved in selecting the stripers—are looking for in the candidates they select, and to provide a foundation on which to build the quantitative prong. The quantitative portion was used to statistically model the selection process, and to compare it to the stated goals and objectives from the qualitative portion.

We gathered preliminary qualitative data using what Patton (1982) would likely call a "matrix" approach. Rather than using one method, such as interviewing, he

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suggests using multiple approaches to gather data (1987, 1982). We elected to use both formal and informal interviewing techniques, simple surveys, and non-participant observation. Survey design techniques were drawn from the various writing of Patton (1997, 1987, & 1982), and reviewed by Alice Crawford of the Naval Postgraduate School. Patton (1997) also suggested evaluation and presentation techniques.

We conducted the initial analysis of the archival data presented in Chapter IV using t-tests and Pearson Correlations. Schwab (1999) and Morgan, Griego, and Gloeckner (2001) suggested this approach as a preliminary step to logistic regression analysis.

Logistic regression methods have enjoyed a recent growth in popularity for their ability to predict the odds of a particular outcome of a binomial dependent variable based on two or more covariates (Menard, 2002; Bowman, 1998; Cox & Snell, 1989; Pindyck and Rubinfeld, 1981). Becoming a striper is such a dependent variable; either a midshipman is selected as one, or he is not. Therefore, a logistic regression is the best-suited approach to analyze the selection of the stripers.

F.   CHAPTER SUMMARY

Recent literature suggests that using trait-based models to predict the identification of leadership potential is a valid approach. Some of the traits identified are cognitive ability, proven leadership ability, personality, and peer feedback. After a discussion of the formal striper selection process at the Naval Academy, we selected a two-prong approach to assess its effectiveness. The first prong is to use qualitative methods to attempt to define how the process actually works and to identify what the goals for those traits in the case of a striper candidate might be. We then selected a quantitative approach, specifically using a logistic regression, to analyze the effectiveness of the process from a statistical point of view based on the traits identified in the qualitative portion.

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III. QUALITATIVE DATA PRESENTATION AND ANALYSIS

We collected preliminary qualitative data to lay a foundation to build the multivariate model ultimately developed by this thesis. By seeking and documenting the views of those who actually select the stripers for the Brigade of Midshipmen, the qualitative data described in this chapter aims to tie leadership selection theory to the actual practice in place at the U.S. Naval Academy.

A. DATA SOURCES

We obtained the data in this Chapter through surveys, interviews with subject matter experts within the Commandant's Staff, and non-participant observation of the striper selection process. To a lesser extent, it also draws on less formal conversations with others involved in the process, such as Company Officers and junior members of the Commandant's Staff, as well as the researcher's own experience at the Naval Academy. This section documents pertinent source information for the three primary methods of qualitative data gathering, as well as the rationalization for the development of survey questions.

1. Interviews

Interviews conducted for this thesis fall into two categories, formal and informal. Interview protocols were not as formalized as they might have been if they were to be our source of primary data. We therefore did not subject the formal protocols to testing by focus groups or other types of formal validation.

Patton (1982, 1987) is a strong proponent of interviews in process and program analysis as a primary means to gather information for further analysis. Therefore, we chose this approach as a logical starting point in gathering more information to aid in shaping the direction of this research.

a. *Informal Interviews*

We conducted informal interviews with relatively junior members of the Commandant's Staff who were more intimately involved with the mechanics of the selection process. We did not use a formal interview protocol in any of these cases. The primary intention of the researcher was to enter into the interview setting with the idea of gather information about the process itself, as well as seeking some historical information. This approach also allowed the interviewer great latitude in exploring many inter-related topics within the selection process without the constraints of a formal protocol to complete.

Those interviewed included Lieutenant Andrew Person, USN, the Aptitude for Commission Officer [4] and his permanent civilian assistant, Mr. Ron Hawkins. Mr. Hawkins has filled that role for more than thirty years, and is the recognized expert in the performance system. The people filling these two positions have the primary responsibility for administering the selection process. Additionally, the Performance Officer sits as the non-voting recorder for the Selection Board. We interviewed Commander Nicholas Freeman, USN, the Assistant Director for Honor in the Character Development Division to gather information concerning the selection process of the Honor Staff.

We conducted all informal interviews in the respective offices of the individuals interviewed. We only recorded and transcribed the informal interview with Lieutenant Person. We kept hand-written notes for the remaining informal interviews given the relatively simple nature of the information they were providing.

b. *Formal Interviews*

We intended for the formal interviews to gather pertinent information from the senior members of the Commandant's Staff, including the Commandant himself, in order to obtain data from subject matter experts concerning the selection process. Three interviews were planned, one each with the Commandant, the Deputy Commandant, and the Director of Character Development. Following the interview with

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[4] Until very recently known as the "Performance Officer."

Commander Freeman of the Character Development Division, it became apparent that the interview with the director was unnecessary, as his involvement in selecting the Honor Staff was very cursory. Irresolvable scheduling conflicts prevented a timely interview with the Commandant of Midshipmen.

The Deputy Commandant, Captain Gregory Parker, USN, is the primary overseer of the Striper Selection Process; it his responsibility to ensure qualified candidates are selected, slated into positions, and presented to the Commandant and Superintendent for final approval. He was interviewed on February 20, 2003 in his office. We recorded and transcribed his interview. We provided him with a read-ahead, which consisted of an explanatory memo and the intended questions, and it is included as Appendix A.

We designed the straightforward questions with the primary focus of gaining a subject-matter expert's point of view on the striper selection process. We intended the first question regarding the process of the selection board to gather information about the board that might not be learned by reading the pertinent instructions or by observation. We intended for the second and third questions concerning precepts for the board and eliminating biases to garner further information about potential desirable and undesirable traits of striper candidates from the point of view of the guidance that senior leadership may or may not have been providing.

The fourth question, number 3d, aimed to get his opinion as the subject matter expert on what constitutes a solid candidate for a striper position. The following question concerning the communication of his views to his subordinates intended to gather information that could be later correlated to the responses of the Company and Battalion Officers on their surveys, and provide a possible explanation if the multivariate model did not in fact accurately describe the desirable traits. The final question simply intended to find out his opinion concerning the effectiveness of the selection process.

2. Surveys

It is important to reemphasize at this point that we administered the surveys, as with the interviews, solely for the purposes of gathering preliminary qualitative data and for later tying theory to application. Although expert guidance was sought and a minimal amount of "respondent testing" was conducted, they were not designed using a strict scientific method, nor were they subjected to rigorous pilot testing.

We distributed the surveys via email on February 7, 2003 to the 30 Company Officers and 6 Battalion Officers. We asked respondents to reply via email within a week to the one-page survey, which was a Microsoft Word Document. They had the opportunity and ability to respond anonymously, although none elected to do so. We followed up on the surveys administered to the Battalion Officers in person in order to provide addition information if needed. Of the 30 Company Officer surveys, 17 were returned (56.7%) between February 7 and March 17. Four of the six Battalion Officers responded (66.7%), all by February 26. One Battalion Officer preferred to complete the survey in person in more of an interview format. The surveys may be found in Appendices B and C.

The questions were both open-ended and in a yes/no in format. We developed them with the assistance of Professor Alice Crawford of the Naval Postgraduate School. We received further assistance in editing the surveys from a current Company Officer and member of the Fourth Cohort of the LEAD program. Unless otherwise stated below, similarly stated questions on the Company and Battalion Officer Surveys had similar intentions in their asking.

The first series of questions related to the levels of selection guidance communicated by the chain of command. Their purpose was two-fold. First, they aimed to ascertain if there was a flow of communication essentially between the Deputy Commandant and the Company Officers two levels below him regarding the desirable traits of potential stripers, and if so how formal this communication was (Questions 1b and 2b on the Battalion Officer Survey and 1b on the Company Officer Survey). An affirmative answers to this particular question would enable us to treat all of the "trait" responses as one regardless of source. A tendency towards negative responses, however,

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would provide a possible explanation why selection criteria expressed by senior decision makers was not being met, if that turned out to be the case.

Question 2 of the Company Officer survey was an open-ended question asking the respondent to list qualities he or she tends to look for in potential striper candidates. We meant for the responses to this question to form the crux of the arguments for choosing the selected variables that correspond to those traits in the multivariate model. We also intended for Questions 2a and 2b to gather similar information from the Battalion Officers in addition to the information regarding the communication flow-path described above. However, we believe the question may have failed to achieve this latter objective adequately, as we based it on the apparently erroneous assumption that the majority of Battalion Officers did provide guidance to their company officers.

This series of questions in both surveys regarding selection board construction and processes spawned from the researcher's casual observation that some of Company and Battalion Officers were not following the written instruction exactly. Their purpose therefore was to ascertain if and by how much the respondents were diverging from the instruction in specific areas. At a secondary level, some of the questions sought to gather more trait information about whom the leadership was selecting for and eliminating from consideration as candidates.

We based the "volunteer" question on our own experience, understanding, and knowledge of a long-standing debate amongst the staff concerning the appropriateness of asking volunteers to fill striper positions versus a pure selection of potential candidates solely by the Company Officers. Essentially, one side argues that people should not be stripers unless they want to be first and they should therefore ask for volunteers, while the other side argues that asking for volunteers takes the experienced leader's judgment for identifying strong potential leaders out of the picture. We likely worded this question poorly, since follow-on informal questioning of several company officers revealed that they actually take both approaches.

We asked the Company Officers if they filled all available "slots" for striper candidates to pass to the Battalion Board. We ultimately disregarded this question, determining that was not specific enough to generalize any useful information.

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Specifically, the question should have read, "Do you feel *compelled* to fill all of your available slots?" as a means to measure if there is external system pressure to merely "produce names" as opposed to forwarding only the most highly qualified candidates.

In Questions 3c and 3d of the Battalion Officer survey, we asked them if they used standardized questions on their boards, and if so, what they were. The purpose of these questions was to obtain any such questions, and examine whether or not any desirable or undesirable traits could be extracted based on them.

We asked both the Company and Battalion Officers if there were any "red flags" in a midshipman's record that would remove him or her from further consideration for a striper position. The primary purpose of this question was to explore the possibility of potential variables that would counter-indicate selection as a striper. A secondary purpose was the help in predicting and validating the anticipated signs of the coefficients in the multivariate model.

The last question we asked the Company Officers was if they used the same criteria to select their Company Commanders as they did their striper candidates.[5] There were several purposes for this question. First, if they tended to select the Company Commanders for the same reasons as the striper candidates, then there would be a logical argument for including them as "selected" as stripers. Given the very small number of midshipmen actually selected to be four-stripers and above (approximately 5%), adding the Company Commanders would increase the occurrence of the dependent variable by nearly three-fold, which would likely result in a model that was a better fit (Menard, 2003). The secondary purpose was to determine what the traits were if they were different from those of the stripers. This would open the possibility of either building a second model just for Company Commanders, or possibly examining the traits with the potential conclusion that they really are not very different, and therefore enable the Company Commanders to be included in the dependent variable.

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[5] Solely the Company Officer and his or her staff select the Company Commander, which is a three-striper billet.

3. Non-participant Observation

Patton also strongly recommends non-participant observation when conducting process analyses (1982, 1987). By observation of what happens as well as what does not happen—particularly in a group setting—a researcher may gain insight into the functions of the group that may not be found any other way. Although participant observation may have yielded even greater insight into the process, becoming a participant in this instance was not possible since written instructions mandate board structure. Further, it would have been largely inappropriate for the non-participating observer to exert any influence whatsoever on the selection of stripers.

The observed board convened on March 4 and 6, 2003 to select and slate the four-stripers and above for the fall semester of the 2004 academic year. The observer was present for all of the board proceedings except the portion dedicated to interviewing the candidates for 2/c leadership positions and the first hour of the second, or slating session.[6]

There were three principal objectives of observation. The first was simply to observe and record the actual mechanics of the board with the intention of comparing it the written instructions. The second objective was to determine whether we could observe any consistent trends in the type, subject, and frequency of the questions asked by the board, that we could then use to identify possible desirable or undesirable traits. To accomplish this, using the list of suggested questions, we kept a tally of each time a board member asked a particular question. We added any additional questions not on the list as they were asked to the tally sheet.

The third and final objective was to determine if we could identify any desirable striper traits during the slating process of the second board session. We did this by noting and counting every argument made by a board member for slating a given individual into any billet. For example, we noted and counted each time any board member used an argument to the effect of "he has a strong command presence." We could then classify

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6 We were not apprised of a last-minute schedule change.

each argument based on the trends identified in the other areas of preliminary data collection. We used the frequency each trait was mentioned to strengthen its relative importance.

B. PRELIMINARY DATA: THE SELECTION PROCESS IN ACTION

This section explains how the striper selection process is actually executed in the day-to-day context of Naval Academy based on the collected data as described in the previous section. The process largely functions as described in chapter two, so this section will highlight particular roles the key personnel play and how the selection process appears to differ from the written guidance.

An important caveat to this section is that the personnel available for interview and survey were limited to the current staff at the Naval Academy of the Spring Semester of the 2003 Academic Year. In other words, the multivariate model we will present later in this thesis does not reflect the set of stripers selected by the current cohort of the selection board. In fact, the composition of the selection board might be very similar between the two semesters in the Academic Year, but it is extremely improbable that it is the same between academic years due to turnover related to normal military rotations.

Therefore, it is necessary to assume that the process, or at least the intent of it, has not changed significantly over the past five to six years. Mr. Ron Hawkins has validated this assumption (Personal Communication, January 22, 2003).

1. Company Officers

The Company Officers at the Naval Academy serve primarily as role models, mentors, and administrators for each of the 30 companies. They are the first commissioned officer in a midshipman's chain of command. The majority of them are junior O-3's in the Navy, typically serving the first duty assignment ashore. The group composition is typically made up of about six to eight Marine Corps Officers. Of all the commissioned officers assigned to the Naval Academy, they have the largest amount of daily interaction with midshipman. Therefore, they are viewed as having the information that is most relevant in successfully selecting potential brigade leaders. In addition, given

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that they are at the beginning of the process, they are in the position to eliminate the majority of the potential candidates.

The 17 Companies represented by survey responses did so via email; none took advantage of the ability to respond anonymously. In all but one case, the Company Officer responded directly. The one exception was a response from a Company Senior Enlisted Leader (SEL), as the company officer had recently transferred and their replacement had not yet been through the process. The current Company Officer requested permission prior to doing so, and it was given with the caveat that they should respond from the perspective of the company officer. As a result, the SEL was unable to respond to the first question, which was in regards to whether the Company Officer received any selection guidance from their Battalion Officer. The one other Company Officer that responded in that Battalion indicated that they had.

Both surveys included several questions about receiving or providing guidance with respect to identifying the desirable qualities of striper candidates. These questions grew from two factors. First, there is a lack of any formal definition of what "the best candidates" specifically means in any of the instructions or notices. Second, an assumption that since senior leadership believes the process is generally successful in picking the right people, (G. Parker, Personal Communication, February 20, 2003, et. al.) who "the right people" are must be communicated effectively to the staff. We intended for the questions to test that assumption, and if correct to find out how that guidance was being given.

Eight of the 16 responses to the "received guidance" question indicated that they had received some form of guidance from their Battalion Officers in terms of what types of individuals should be considered for striper positions. All of the positive responses indicated the guidance was at least via spoken communications, either in a formal meeting session or in settings that were more conversational in nature. Two of the 16 indicated they *also* received guidance via email. We will reserve our discussion of the specific types of guidance for later in this thesis.

Sixteen of the 17 respondents answered that they do ask for volunteers to be stripers. In an interview, the Deputy Commandant of Midshipmen indicated he

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specifically did not want Company Officers to ask for volunteers. He specifically intended for Battalion and Company Officers to "find the best candidates for stripes and send their names up" (February 20, 2003). This was in direct contradiction to what was actually happening in the majority (just over 53%) of all of the companies. Based on personal observation and experience, this has been a long-standing debate amongst the staff of the Naval Academy. Generally, those in favor of seeking volunteers argue that those who volunteer are the ones who have the highest motivation to do the job well, and it is undesirable to put midshipmen into jobs that they do not want to do in the first place. Those opposed argue that the experienced judgment of a commissioned officer should be the key element in finding the most qualified leaders, not mere desire. Based on several informal conversations with current Company Officers, those who do ask for volunteers actually tend to combine the approaches. A request for volunteers is merely a starting point, as in the Honor Staff selection process. In their view, voluntarism alone does not guarantee them an interview even at a Company Selection Board.

Thirteen of the 17 respondents (76.5%) indicated they do use a company selection board as directed in the COMDTMIDNINST 1601.12. Board composition in general was consistent with the instruction as well. All boards included the Company SEL, at least one Midshipman who was a current or immediate past Company Commander, and all but one included the Company Officer. Eleven used either current or previous Company Executive Officer (XO). Other board members included additional components of the Company Staff; some of those listed included the Company Operations and Training Officers, and "out-of-company stripers."[7]

Although the governing instruction sets the maximum number of candidates per company at three, there is no evidence to confirm this. What the survey responses did indicate, however, is that all 17 respondents reported that they used all of the slots available to them. However, one unsolicited response to this question was "I did this

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[7] "Out-of-company striper" is a term used to denote a member of a company who is currently filling a position that is senior enough to require them to live with the other members of their respective staffs in a separate, central location, out of their normal company's living areas.

time, but would not necessarily do so, if I didn't feel I had the candidates to do so." This response is typical of several personal observations and other informal conversations with the researcher.

Company Officers indicated that they select their Company Commanders for different reasons than their candidates for striper positions at a rate of roughly two to one (eleven of the seventeen company officers said they used different standards). Many of the listed traits for Company Commanders were in actuality *similar* to the ones listed for stripers, but they seemed to tend more along the lines of "good peer leader" or "well-respected by their peers."

In summary, the majority of the company officers follow the spirit, if not the letter, of the instruction with respect to the mechanics of the selection process. There does, however, seem to be a disconnect between the senior leadership and the company officers on the topic of volunteerism.

2.   Battalion Officers

The six Battalion Officers are typically senior post-command Naval Officers. They are usually senior O-5s or junior O-6s. There is customarily one Marine Corps officer as well. They are the immediate seniors to the five Company Officers in their Battalions. Their role is primarily to provide a source of experience and guidance for the company officers, essentially equal to what could be provided by the Commandant and his Deputy if they had unlimited time.

Of the four Battalion Officers who responded to the survey, one preferred a personal meeting. The meeting followed the survey as an agenda, and then the researcher transcribed the results into a completed survey. This had the serendipitous advantage of providing additional information and insight into the striper selection process at the Battalion Officer level than the survey alone could have.

Only one of the four reported receiving any guidance on what qualities to look for in a striper candidate. The one affirmative response came from the pseudo-interview, in which the only guidance, provided verbally, was "diversity." This is a somewhat

nebulous concept that continued to emerge throughout the process, as it apparently had in the past according Reardon (1997) and Micheli (1998). Note that there is currently no quota system in place at the Naval Academy in the striper selection process (G. Parker, Personal Communication, February 20 2003).

Three of the four Battalion Officers did not report providing guidance to their company officers. Based on the response received, this correlated well with the company officer responses ($\rho = .756$, $r < .05$). The one respondent who provided guidance—also from the pseudo-interview—reported his guidance was "don't send up anyone you need for yourselves in the Company, and don't send anyone who would embarrass themselves at a board." The former part of his guidance partially conflicts with views from the senior leadership in which the Battalion Officers were directed to "find the best people" and "don't hold anyone back if they have what it takes to be a brigade striper" (G. Parker, Personal Communication, February 20, 2003). There is currently no data available to test the prevalence of either attitude in the remainder of the five battalions.

All four of the respondents indicated that they used a selection board. However, board composition deviated more from the published instruction at the Battalion level than at the Company level. All respondents reported themselves, one or more of the Company Senior Enlisted Advisors, and the current Battalion Commander as members. One of the three specifically excluded Company Officers to prevent personal biases from entering into the discussion; however, he afforded them a "heartburn check" opportunity after the selection board concluded but before the candidate list was finalized. None reported including any Company Commanders as part of the board as the instruction requires, although three reported including other midshipman members of the Battalion Staff. Only one Battalion Officer reported using standard questions at their board, although a second respondent (who reported not using them) indicated that some were available.

In Summary, the Battalion Officers seem to operate more independently in the selection process. Their approach to the process also appears to be consistent with the general pushing downward of responsibility of selecting the stripers by the Deputy Commandant of Midshipmen (G. Parker, Personal Communication, February 20, 2003).

Finally, they tend to deviate from written guidance more than Company Officers do, although these deviations were relatively minor. Our observations appear to be consistent with the relatively dramatic difference in rank and experience between Battalion and Company Officers.

3. The Brigade Selection Board

This section is based largely on the information obtained in a formal interview with Captain Gregory Parker, USN, Deputy Commandant of Midshipmen on February 20, 2003, and non-participant observation of the Brigade Selection Board. This section is divided into two parts, matching the two sessions of the board—the interview session and the slating session.

a. The Interview Session

The Aptitude for Commission Officer and his or her civilian assistant are the principal organizers of the selection board. Once the Battalion Officers have submitted nominees, they will prepare the briefing binders for the members of the selection board. These binders include the performance records of each midshipman, photos of each candidate (although a technical difficulty prevented these photos from being included in this year's binders until the second day), and a ranking sheet. The ranking sheet comes directly from COMDTMIDNINST 1601.12, but has the names, their previous semester Cumulative QPR (GPA) and company number filled in. The binder also includes an appearance schedule with similar information as the ranking sheet, and a one-page list of suggested questions.

Conspicuously absent from the current briefing books were the Company Officer Recommendations mentioned in the instruction. According to Captain Parker, this omission was deliberate, and was done for two primary reasons. First, at that level of competition, they all seemed to say the same thing, and were therefore not very useful. Second, given their relevant unimportance at the board, he felt it was a waste of the Company Officer's time to produce these recommendations.

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The selection board convened in the Commandant's Conference Room, located in Bancroft Hall, the residence of the 4,200 members of the brigade. This particular board consisted of the Deputy Commandant, the six Battalion Officers, the current Brigade Commander and his immediate predecessor, and the acting Brigade Command Master Chief. The Aptitude for Commission Officer served as the recorder. The researcher was the only observer present for the duration of the proceedings. The three primary warfare communities within the Navy and the Marine Corps were represented. There was one minority female present; the remainder of the board were Caucasian males. In his interview, CAPT Parker implied that he has tailored the combination of midshipmen participants if necessary to ensure fair minority and gender representation.

The Deputy Commandant standardized the procedure for each interview; however, the exact procedure is not in writing. The basic procedural instructions for each striper candidate were posted outside of the conference room. The instructions directed each candidate to sit at the end of the table after presenting him- or herself to the board in the traditional military manner. Ron Hawkins assigns the interview order, first based on candidate's open class periods, and then random assignment (N. Olson, Personal Communication, March 18, 2003). After a brief introduction and explanation by the Deputy Commandant, the board moved to questioning each candidate.

The questioning moved counter-clockwise around the room. Each candidate had approximately an eight-minute interview and was asked three to four questions. Therefore, every board member had an opportunity to ask a question of about every third candidate. Some board members asked questions from the provided list, particularly earlier in the session. Others asked their own questions, many of which were based on the standardized questions. Some repeated the same question at each opportunity, although this was not as prevalent towards the end of the session either. At least half of the questions were worded to fit many of the current issues within the brigade. Following each candidate, the Deputy congratulated each person on making it to the board and excused them. There was no request made of each interviewee to avoid discussing their interviews with other candidates.

Early in the process, candidates were brought in one right after the other. After approximately the first hour, board members requested a pause for discussion between each interview. This became an opportunity to briefly (no more than three minutes) discuss candidates, particularly when one of the board members might have had occasion to know the individual on a more personal level.

With 24 candidates and a minimum of three questions asked of each of them, there were over 72 opportunities for board members to ask questions. At least 42 different questions were asked within those 72 opportunities. However, we detected no discernable trend of questions that related to either desirable or undesirable traits. However, we could generalize the vast majority of the questions as relating to current cultural phenomena at the Naval Academy and the candidate's views towards them. A second group of questions related to the candidate identifying his or her own strengths and weaknesses. Further, individual's specific answers to questions were only discussed two or three times during the interview session and three or four times during the slating session. Therefore, it seems probable that the questions themselves and the answers were somewhat irrelevant. However, how the candidate answered and the manner in which he or she carried him- or herself—particularly in the context of being in a room with senior officers—was very important.

The board adjourned after interviewing the twenty-four striper candidates and the six candidates for the Sergeants major positions. The proceedings took approximately four and one half hours.

b.   *The Slating Session*

The board reconvened at 0700 two days later to begin the "racking and stacking" process, as Captain Parker typically calls it. The Board observed that there was a general lack of minorities among the candidates, so they agreed that the Battalion Officers would return to their Battalions to find potential minority nominees for striper positions. This decision was made prior to the researcher's arrival, and was consequently explained after the board adjourned by Captain Parker.

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After this discussion, the board began the slating process. They first eliminated the bottom three candidates by consensus, given there were twenty-four nominees for twenty-one billets. The board then proceeded to select the Brigade Commander.

The process used was primarily one of consensus building. They took periodic votes to assess the status of the slate, but they did not base their final selection strictly on a popular vote. They used different voting styles throughout the session as well. For example, the board began by naming each of their top three candidates. From this list, six candidates emerged as the clear favorites. In different voting process, they used a simple majority vote to pair this list down to three names. After some time, the Deputy Commandant granted an opportunity to bring any names back into consideration for Brigade Commander who, for whatever reason, had been eliminated by voting. They made their final decision by verbal consensus.

After they selected the Brigade Commander, they billeted the Regimental Commanders in a similar, though not as rigorous, manner. Following that process, the Deputy asked the Battalion Officers to remove the names of those they wished to have as their Battalion Commanders from further consideration, further emphasizing his view of the relative importance of the unit commander type billets. At this point, they considered the distribution of the striper positions across the Battalions and Regiments, although this did not appear to be a primary concern of the board. The elucidated concern was that of creating a perception that one Battalion was unfairly weighted with "big stripes."

After selection of the unit commanders, they filled the staff billets, some of them tentatively based on the possible outcome of the re-look the Battalion Officers agreed to take. Often, they based the slating into staff positions on known traits, gender and ethnicity concerns, and distribution about the brigade. As an example of the former case, they selected the remaining candidate with a clear, loud speaking voice to be the Brigade Adjutant because of the particular requirements for a strong voice of that job at formal military parades.

The final aspect of the slating process was to choose the Brigade Sergeant Major and the two Regiment's Sergeants Major. This was an easier process since, in this particular case, three of the six candidates were easily eliminating for a myriad of reasons. The standout of the remaining three was unanimously selected to fill the Brigade Billet, and the other two were billeted by the regiment they happened to be in.

Of particular note from these board proceedings was that there were several deviations in this process from the written instruction. First, they grant the Deputy Commandant votes, but he consistently did not exercise this privilege, even though at least three of the tallies were tied or within one vote. Second, the instruction implies the use of a ranking and voting procedure as opposed to the consensus method. The instruction, however, does not explicitly state how to create the final list. Finally, the acting Brigade Master Chief was effectively given a vote by the procedure actually used, although he was technically not entitled one by the instruction.

4. The Honor Staff

Information concerning the actual selection process in place for choosing the Honor Staff came from Commander Nicholas Freeman, USN, the Deputy Director for Honor of the Department of Character Development at the Naval Academy. He emphasized that almost exclusively midshipmen, with minimal oversight from the staff, run the honor system at the Naval Academy. He also emphasized that the selection process follows the procedures detailed in USNAINST 1510.3F and summarized above. There are a few exceptions, however.

There is an addition of a step in the selection process. Following the selection of the 10 to 15 nominees by the Company Honor Representatives, the sitting honor staff selects the midshipmen to fill "big seven" billets from the list provided them. A selection board of officers chaired by the Director of Character Development then interviews this slate of nominees. Each one is given approximately a fifteen-minute interview. They do not know which billets they have been slated for at that time. Commander Freeman reports that the purpose of this board is simply a "gut check," designed to provide

minimal oversight of the process. Although they have the authority to overrule the slate provided to them, he reports they seldom, if ever, do so.

This separate selection board fills the role of the selection board as required by the Commandant's Instruction. When the current striper selection instruction was written, Ron Hawkins reports that the main striper selection board screened the honor board only once before that practice was abandoned. This was also approximately when the Department of Character Development was formed into its present state and assumed its current oversight role of the honor system, so it is difficult—if not impossible—to determine exactly why that practice was abandoned at the time.

C.   WHAT THEY ARE LOOKING FOR

This and the following sections are based on the qualitative data collected from interviews, survey, and our observations of the selection board. We based the identified themes on traits that are potentially measurable for midshipmen. We present these themes in order of decreasing prevalence.

1.   "The Top Performers"

This trait, expressed in many forms, was clearly the most prevalent desired quality in a candidate for a striper position. At the individual component level, this can be the hardest to measure, since it accounts for sub-traits that range from the objective, such as uniform appearance and grades in their professional courses, to the subjective, such leadership ability and potential. Some examples from the Company Officer Surveys that illustrate this include:

Leadership potential, willingness to work hard, ability to communicate...

Aptitude for Commissioning Grades... personal appearance in uniform...demeanor, professionalism

...they do have to be role models, they have to 'get it' (meaning why the policies, regulation, [the chain of command], the 'system)

Good public speaking abilities [and] trim appearance.

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Past performance history... [s]traight forward and honest (i.e. not a 'yes' man)

Motivation, Initiative, Presence, Personal Example, Accomplishments to date

These are very typical of the responses. All seventeen of the survey responses list at least one trait that falls into the category of military performance, representing both ends of the subjective versus objective spectrum.

In his interview, the Deputy Commandant had the following to say about the desired qualities of stripers:

...[someone] who looks good in uniform, not broaching the height/weight standards. There has to be a clear, obvious inference that there are no issues with that. In other words, they have the moral authority to lead because they've never had any troubles themselves. And they speak well. And they are able to present themselves, or appear that they will obviously be able to present themselves well to outside agencies and dignitaries. ...the Brigade Commander...is tapped to do a lot of interface with guests of the superintendent and outside and senior government officials and foreign officials. So, it is important for them to be able to carry themselves in a mature manner in a way that will be well perceived by people outside of the academy.

Commander Nicholas Freeman also reports that part of the "gut check" that the selection board for the Honor Staff conducts is to examine the military performance grades of the candidates. He indicated the board is looking to make sure the nominees have reasonably high grades in performance, particularly for the four and five stripers. He stated this was primarily because of the visibility within and without the brigade of those that fill the positions on the Honor Staff.

Finally, we observed the comments made by the board members when discussing the slating of the top stripers. These comments related to the traits of individuals that suited them well for a striper position. We identified forty-two different comments made about approximately sixteen possible traits. They ranged from demographics such as gender and battalion, to personal qualities that would suit them well to being a leader; i.e., being a "top performer." Twenty-four, or 57%, of the comments fell into the latter category.

2. "Good Grades"

Nine of the 17 Company Officers reported "academic grades" as being a factor in selecting striper candidates. Some listed very specific numbers, such as "B's across the board" or "[greater than a] 3.0 CQRP [GPA]." The standard also varied from one end in the former standard, to simply "academically SAT" [meets the minimum academic requirements to be a midshipmen]. One Company Officer stated what seemed to be a common theme in that "that they do not have to be academic rocket stars [sic], but they do have to be role models."

One Company Officer specifically mentioned that to in order to be considered, a midshipman must be able to "academically support the workload of a striper." This was also a theme within the Brigade Selection Board. Although they mentioned "grades," referring solely to academic grades, only two times out of the 42 observed "trait" comments, they were considered more of an indicator of being able to handle the additional workload of a striper position as opposed to a prerequisite for the job. Additionally, Commander Freeman indicated that grades were important to the Honor Staff's selection board for similar reasons.

3. "Proven Leaders"

This trait relates closely to "top performance," however the 2/c leadership billets afford a candidate an opportunity to prove that they are capable of handling a high-level job within the brigade organization. Some other contributing factors merit it being set apart as well.

Six of the 17 Company Officers responses set "proven" or "demonstrated" leadership ability apart from other qualities. This does not just represent "leadership potential," which may only be in the eyes of those evaluating an individual, but actual, measurable successes when they have been given an opportunity to succeed or fail.

Participation on the Plebe Summer Detail as part of the cadre of select Midshipmen who train the incoming class also seemed to serve in a candidate's favor. Two Company Officers mentioned this in their survey responses. In addition, different members of the selection board mentioned it at least twice during the slating session.

During the interview portion of the selection board, members made a distinct point to identify current or previous Sergeants Major, serving at the Battalion level or above, as well as recollecting others who had at least interviewed for one of these positions. This would seem to indicate an attention to trends of successful leadership opportunities in a candidate. However, they did not explicitly discuss this trait during the slating process in the second session.

Finally, during his interview the Deputy Commandant mentioned "being able to interact with senior officers or dignitaries" in one form or another at least three times, as well as a desire to have a Brigade Commander that could work well directly with him. There is no way to know an individual will have this quality without having observed it directly first.

4.   "Demographic Distribution"

This trait sounds very similar to "diversity," but this research aims to set it apart. At the Naval Academy, demographics include more than just ethnicity and gender, but also varsity athlete status, company/battalion assignment, and major, and to a lesser extent post-graduation service assignment interests.[8]

The Deputy Commandant emphatically stated that he did not use, nor desire to use, any type of quota system in order to ensure diversity amongst the stripers. He simply stated, "I make sure it happens." This is consistent with the response from the Battalion Officer who requested the informal interview, who stated, "...the only guidance I get [from above] is 'diversity.'"

Captain Parker also made mention of varsity athlete status. He, as well as Ron Hawkins, suggested that there has been a perception amongst the brigade that varsity athletes are not given a fair shot at getting stripes since they are typically not as well known by the Company Officers. Efforts such as the inclusion of Officer Representative inputs underscore the desire to change this perception.

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[8] Interest in the latter trait, post-graduation service assignment, is probably the result of a recent anomaly; five of the top six stripers during the current academic year selected the Marine Corps upon graduation. Since the current Commandant of Midshipmen is the first-ever Marine Corps Colonel serving in the post, there was some concern expressed of creating a perception that a midshipmen "had to want to be a Marine to get picked," creating an unfair perception. Hence, we have made passing mention here.

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During the slating process, the board mentioned three apparent demographic-related traits. Most frequent was gender, mentioned at least six times. The second was academic major, mentioned at least three times. Finally, as mentioned above, distribution of the stripes across the entire brigade seemed to be important in order to ensure a perception of fairness.

As a final observation of demographic distribution, the Battalion Officers were, in fact, sent back to find candidates due to an apparent lack of ethnic diversity. Ron Hawkins reported that this was not an isolated event; however, the "turn back" typically occurs before the board convenes.

D.   WHAT THEY AREN'T LOOKING FOR

This section draws data primarily from the surveys of the Company and Battalion Officers. The survey asked the respondent if there are any "red flags" that would cause them to remove an individual from consideration for a striper position, and if so, what they are. All but two of the total survey respondents indicated that there were such indicators. Supplemental support for was also found in the interviews with the Deputy Commandant of Midshipmen, the Deputy Director for Character Development for Honor, and several informal conversations with Company Officers and others familiar with the selection process.

1.   "Poor Military Performance"

Seventeen of the nineteen respondents to the "red flag question," including all four of the Battalion Officers, indicated some measure of poor military performance as a red flag. Although many mentioned simply a "poor performance/aptitude for commission grade," this wide-ranging area might encompass many potential specific measures of performance.

The most common of these measures mentioned was "PRT [physical readiness test] problems/failures," mentioned eleven times in survey responses. A less measurable example of a trait-response in this category was that the midshipman was a "poor role

model" for his peers. Other examples include "poor uniform appearance" and the presence of a potential "alcohol problem."

A midshipman faces separation from the Naval Academy if found guilty of an honor offense, although this is not an absolute certainty. If a midshipman is retained, usually through a remediation program, the offense is officially recorded as a major conduct offense and hence part of the performance grade. However, likely due to the perceived egregiousness of an Honor Offenses, eight of the respondents specifically identified an honor offense, especially a recent one, as a red flag.

2. "Conduct Problems"

Eighteen of the nineteen respondents who answered "yes" to the red flag question indicated that "conduct problems" was one of them. The conduct grade is a factor considered in assigning the military performance grade mentioned above, however the frequency that this specific aspect of the performance grade merits breaking this element apart from the total grade. Of those that listed multiple red flags, "conduct problems" was either the first or the second factor listed. Responses classified in this area ranged from "recent major conduct offense" to having a "history of conduct problems." One respondent defined recent as "past three semesters"; another described it as having been within the "past 6 to 12 months." Two respondents, one Company Officer and one Battalion Officer, indicated that they would not necessarily remove a midshipman who had conduct problems in the past from consideration; however, they would certainly undergo more intense scrutiny in other areas before they recommended them for further consideration.

The essential point to draw from the varied responses is that an individual's conduct history is a pertinent part of the consideration given to potential striper candidates. In other words, most decision makers in the selection process seem to make a conscious effort specifically to review the candidate's conduct record.

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3. "Poor Academic Grades"

Several respondents indicated that poor grades would remove a midshipman from consideration. Only one respondent specifically provided their definition of "poor grades," which they interpreted as a "CQPR [Cumulative GPA] < 3.00. Although some research discussed in chapter two suggests intellectual ability may be a predictor of leadership potential, Captain Parker and Commander Freeman indicated that they consider academic grades for a different reason. They both explained thy looked at grades from the point of view of strong, consistent academic performance as an indication of the potential to be able to handle the increased time and workload demands of being a striper.

E. CHAPTER SUMMARY

This chapter has examined the striper selection process using various techniques of qualitative data gathering and analysis. Its primary objective was to answer the first two research questions, "how are the stripers selected," and, "what are the written and unwritten selection criteria for stripers."

To answer the first question, the researcher examined the current governing instructions provided by the administration that pertain to the striper selection process, and conducted surveys and interviews of key members of the selection process. According to printed instructions, stripers are selected primarily by passing through three selection boards at increasingly higher levels of the chain of command. They are initially chosen as candidates by their company officers, who represent the first commissioned officer in their chain of command. A brigade striper board, composed of the Deputy Commandant of Midshipmen, the Battalion Officers, the Brigade Command Master Chief, and at least two members of the current or previous midshipmen striper staff, makes the final selection of stripers before it is sent to the Commandant of Midshipmen and Superintendent for approval. The Honor Staff is approved by similar means, but the initial selection of its members is done by popular vote, reflecting the notion of the "brigade ownership" of the honor concept.

In actuality, the selection process closely follows the governing directives. There are some notable differences, however. First, not all Company Officers use a selection board to choose their initial candidates, meaning some candidates will only have passed through two boards when they are selected. Second, at least the Brigade Board does not follow the voting conventions very closely as delineated in the instructions. Also, board composition at the Battalion and Company levels—when used—does not necessarily follow the prescribed conventions. Lastly, there appears to be a communication disconnect between the upper leadership and the Company Officers concerning the selection of volunteers; senior leadership does not desire volunteers, however company officers predominantly ask for them when making their initial cuts.

In answering the second question, the research analyzed the responses to open-ended questions from surveys as well as interview data from subject matter experts. In general, the leadership is looking to select the top military performers in their respective classes, who also have good academic grades, and have in some way proven themselves as leaders. They are also looking to ensure a good demographic or "fair" distribution amongst the brigade with respect to battalion, varsity athlete status, ethnicity, and gender. They are specifically not looking for individuals who have had performance troubles, particularly related to conduct issues and honor violations. Issues with passing the PRT also seem to be a significant detractor. Poor academic grades also seem to be a detractor, although not because of a lack of potential ability but because of a perceived unmanageable workload that being a striper would create for someone who was already struggling with his grades.

The next chapter will introduce data obtained from the Naval Academy's Office of Institutional Research, and use it to begin build a model for describing the stripers at the Naval Academy. We will base our selection of independent variables on the desirable, undesirable, and demographic traits of potential stripers reflected in this chapter.

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IV. DATA ANALYSIS

A. SOURCES

The Data Warehouse at the United States Naval Academy's Office of Institutional Research (IR) is an Oracle database that contains longitudinal information covering midshipmen starting with the class of 1980. Original sources of the data varies, including several automated record-keeping programs the Naval Academy has used over the years, the latest one being the "MIDS" system. All data is thoroughly cleaned and verified prior to being included in the warehouse, and is therefore consider a matter of official record.

The data warehouse does not include information pertaining to the current academic year, as it is not yet part of the permanent, *verified* record. Data pertinent to the current year is contained in the "MIDS" database, which is used as a tool to aid in the day-to-day administration of the Brigade of Midshipmen. Further, it is a constantly evolving database. As new measures are automated and integrated into the warehouse, historic data may or may not be entered, depending on availability. Historic data is, however, often available in other forms if it can be extracted from older file archiving methods, usually in a flat-file format.

Data base managers at IR pulled all data from the warehouse used in this research with the exception of the conduct data. Although not fully integrated into the data warehouse, only conduct files for the classes of 1999 through 2002 were considered accurate (A. Harmon, Personal Communication, February 6, 2003). All data used each midshipman's alpha code, or MIDID, as the primary key for merging and restructuring files.[9]

B. THE ANALYSIS SAMPLE

The first major challenge faced in this research was constructing the analysis sample for the thesis. This decision involved two phases. The first phase was to choose the class years for analysis. Initially, this thesis intended to include data covering class

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[9] An "alpha code" is a six-digit code that uniquely identifies each midshipman. The first two digits are the last two years of the midshipman's graduation, and the last four digits represent the midshipman's original alphabetic position in his or her class.

graduation years 1997-2002. The class of 1997 represented the first complete cohort of stripers that was selected under the current COMDTMIDNINST 1601.12. However, since it appeared that a midshipman's conduct might figure prominently into selection as a striper and the conduct data for the classes of 1997 and 1998 were unreliable, we decided to eliminate these two class years. Although data for the class of 2003, the current cohort, was available from the MIDS system, we excluded is since it is still active, and therefore not reliable.

The second phase involved deciding whom to eliminate from consideration based on a "rule of eligibility." In other words, we eliminated any midshipman whose probability for selection as a striper equaled zero, regardless of the reason. For example, a midshipman who separated during their first year clearly would not be selected as a striper in their senior year. We easily accomplished this, as the data included each midshipman's grades at the end of each semester at the Naval Academy. Therefore, we eliminated cases that did not have data at the end of their sixth semester, i.e. the end of their 2/C year.

The majority of midshipmen who do not graduate are discharged prior to the commencement of their 2/C years. This is the point at which they incur their post-graduation service obligation, which generally marks the end of *voluntary* attrition from the Naval Academy. In this particular sample of four class years, 85 midshipmen did not graduate but where present at the end of their 2/C years. We decided to leave them in the our data base since their reason for attrition could not be directly ascertained with the data provided; therefore eliminating them would be based on groundless assumptions that they were "an attrition waiting to happen." For example, a midshipman may have had an otherwise highly satisfactory record, became a striper, but then did not graduate after having committed an egregious offense that resulted in their expulsion shortly before graduation.

In spite of strong responses from many of the decision makers that related to whom they would not select, there is no clear-cut guidance on who else might otherwise be ineligible for a striper position. We could not identify any other group of midshipman

that we could systematically remove from the population. Our final sample included 3,822 midshipmen believed to have been eligible for selection as a striper.

C.   THE DEPENDENT VARIABLE

The dependent variable measures the individuals who were selected as stripers. The data warehouse contains at least three potential variables that can be used to create the necessary variable for a logistic regression. They are descriptors of billet title, command level, and the rank of the midshipman. Every 1/C midshipman is assigned some manner of striper code. Second class midshipmen who hold a specific billet are also assigned a code. The codes for the 1/C midshipmen range from "Squad Member" (no position) to "Brigade Commander" (the senior position). Every midshipman is assigned at least two ranks and billets, one for each semester of their first class year.

We decided to identify stripers as those with the rank of MIDN LCDR, or four-stripers, and above. There are several reasons behind this decision. First, it was not more than 20 years ago that being a three-striper (MIDN LT) was a "big deal," but that no longer is the case (G. Parker, Personal Communication, February 20, 2003). Captain Parker asserts that this is because the dramatic increase in the number of midshipmen who currently hold that particular rank has diluted its stature. He cited two examples of how this might have happened. First, he notes that each of the unit commanders' staffs have at least doubled in size in the previous 20 years, suggesting a relatively small amount of responsibility is now spread across even more people, thereby decreasing the amount of responsibility that each of them has. The second is by the creation of additional administrative billets that are not part of any staff, most of which are three-striper positions, which pull even more responsibilities away from the operational staffs.

The second reason relates to the selection process itself. All four-stripers and above—regardless of the source of nomination—are at least *approved* by the Brigade Striper Board, if not screened directly. The exception to this is the Honor Staff; however, they are included in the pool of selected stripers since the board convened by the Director of Character Development uses very similar guidelines as the Brigade Board in validating the Honor Staff (N. Freeman, Personal Communication, February 25, 2003). Too many

different decision makers select the three-stripers, such as the Company Commanders, team captains, and brigade, regimental, and battalion staff members. This would introduce too many factors, such as the individual personalities of the decision makers, into the selection process.

Finally, recall from the discussion of survey design in Chapter III that two questions were included in the Company Officer version of the survey that were intended to explore the possibility of including the Company Commanders in the pool of selected stripers. The intent was to explore the possibility of the existence of a link between the selection criteria for Company Commanders and brigade striper candidates. However, 64.7% of the respondents (11 of 17) indicated they used different selection criteria for Company Commanders from their other striper nominees, so we abandoned this idea. Even though many of the supposed "different" traits and characteristics listed for Company Commanders and striper candidates were similar, the connection this thesis could draw would be tenuous at best.

Therefore, we defined STRIPER as "all MIDN LCDRs and above." Of the 3,822 midshipmen believed to be eligible for such a position at the end of their second class year, 194 midshipmen, or 5.1%, were selected as stripers. The striper variable, or STRIPER, was coded "1" for those "selected to be a striper" and "0" for those "not selected to be a striper." We received the striper data as its own file, where midshipmen had a separate case for each recorded incidence of filling any billet regardless of rank or position.

D.   THE INDEPENDENT VARIABLES

This section details the creation and coding of the raw data obtained from the Office of Institution Research into variables that we intended to measure the "desirable" traits described in Chapter III. In other words, all the variables created in this section should ultimately have positive coefficients in the multivariate logit model that predicts striper selection.

1. "The Top Performers"

Qualitative information in Chapter III suggests the top choices for striper billets were those who were the best military performers in the brigade. The Military Quality Point Rating, or MQPR, is the primary measure the Naval Academy uses to measure military performance. The Military Quality Point Rating, or MQPR, is recorded on a traditional 4.0 scale. The components that enter this grade include: the semester Physical Readiness Test (PRT) scores; academic grades received in the professional courses such as naval leadership and naval science; grades from their physical education (PE) courses; a conduct grade based on the number of demerits received in the current semester; and a letter grade assigned by the Company Officer (U.S. Naval Academy Office of the Superintendent 1996). We can then inferr that having high grades in each of these categories—all of which were individually mentioned by the striper selection decision makers—would constitute a top performer.

What was known then as the "military performance grade" receives the heaviest weight. Company Officers have primary responsibility for assigning it.[10] The weighting of this grade increases throughout a midshipman's four years at the Naval Academy. In other words, the grade "counts more" in their first class year than in their fourth class year. Assignment of this component is largely subjective, and it is essentially based on the standard Naval Fitness Report.

At the conclusion of each semester, a Cumulative Military Quality Point Rating is calculated for each midshipman. The proposed model in this thesis uses the Cumulative MQPR as recorded at the end of each midshipman's 2/C year. The decision to use the Cumulative MQPR at this point was not arbitrary. The briefing book that each selection board member has contains the current MQPR, the Cumulative MQPR as of the previous semester, and the projected Cumulative MQPR. Each cohort of midshipman has two opportunities for selection. Therefore, it would be justifiable to select any one of several points in time to calculate the Cumulative MQPR and use it in the proposed model. Institutional Research indicates that these grades tend to stabilize towards the end of a

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[10] This was changed to the "aptitude for commission" grade during the current academic year to better reflect what the administration is hoping to measure.

midshipman's four years at the Naval Academy (L. Mallory, Personal Communication, December 2002). Choosing a point in the middle of the selection opportunities then seemed appropriate. Secondly, choosing this point best reflects their total performance at the Naval Academy prior to becoming a striper and, therefore, excludes any potential influence being a striper has on their performance grades.

Cumulative MQPR was received from IR for the end of each semester with data for individual midshipman recorded as a separate case. The first step to code this for the model was the segregate the data for the second, or Spring, semester of their 2/C years. We did this by subtracting the academic year (ACYEAR) from the year of graduation (GRADYEAR) for each individual, and then sorting by the arithmetic difference. The Academic Year at the Naval Academy begins with the Summer Terms and ends with the Spring Semester. For example, the fall semester for the first class midshipman in the class of 2002 (GRADYEAR) would be the fall semester of the 2002 ACYEAR, even though it is in the *calendar* year of 2001. In this case, the computation described above would therefore yield a "0." Their 2/C year then should have a result of "1" in this computation, since it is one academic year before graduation. This assumption is sound since all midshipmen are required to graduate in four years. We deleted all cases that did not have a "1." We then restructured the data using MIDID as they keying variable to ensure there were no inadvertent repeated cases. Table 1 (page 57) shows the mean, median and other descriptive statistics for CUMMQPR. Figure 3 (page 57) is the frequency distribution of CUMMQPR with a normal curve; note that it has a normal distribution.

Although this method was validated by Alan Harmon of the Office of Institutional Research (Personal Communication, April 18, 2003), there are two drawbacks to it. First, it may inadvertently capture the "wrong" second semester of a midshipman's second-class year if they had more than one such semester. Either a "roll back" or "discharge and readmit" might be the cause of this. The probable number of such cases is small, and it is highly unlikely than any of these midshipmen would have been considered for striper positions anyway, so this is not seen as a major threat to internal validity. The second limitation is in the inclusion of cases in which a midshipman was discharged during their first class year, as already discussed in Section C, above.

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Table 1.   Descriptive Statistics for CUMMQPR

	CUMMQPR
N	3822
Mean	3.08
S.E of the Mean	.00554
Median	3.1000
Mode	3.14
Std. Deviation	.34243
Minimum	1.92
Maximum	3.91

Figure 3.   Frequency Distribution of Cumulative MQPR with Normal Curve

Std. Dev = .34
Mean = 3.09
N = 3822.00
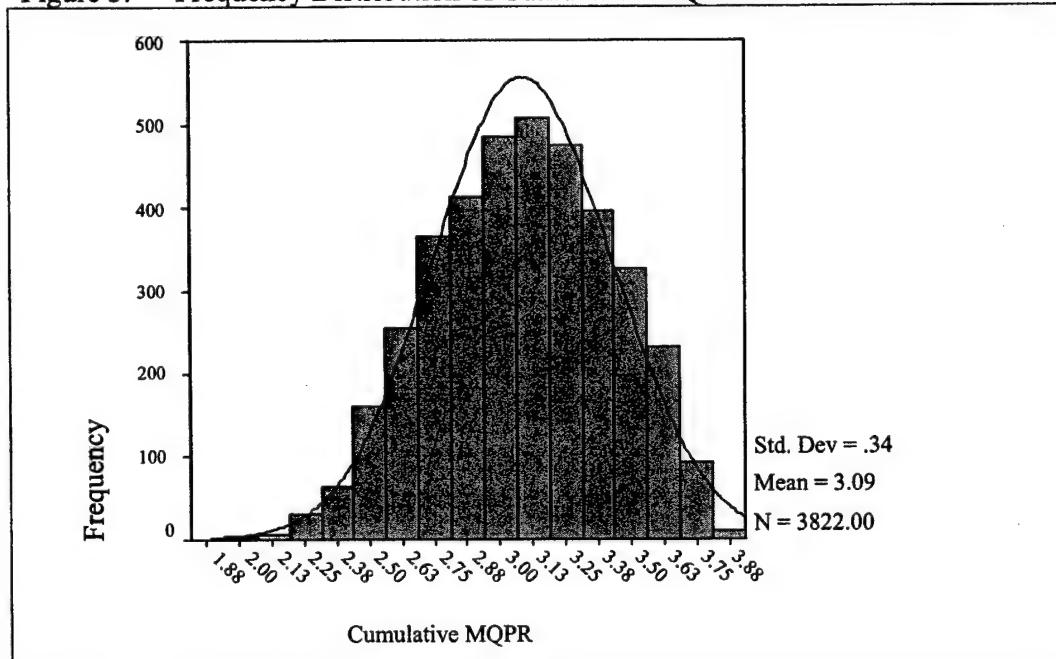
2.   "Good Grades"

The qualitative data analysis identified "good grades" as a possible prerequisite for striper selection for many of the decision makers.   Several "trait" theories of leadership also suggest that cognitive ability is a necessary ingredient in a leader (e.g., Horne, 1970; Jones, 1938). Therefore, the proposed model should include some measure of cognitive ability.

The best measure of grades for midshipmen is their GPA, or Cumulative Semester Quality Point Ratio (SQPR). The SQPR is on a standard 4.0 weighted scale, with

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weightings based on the credit-hours for each course (U.S. Naval Academy Office of the Superintendent, 1996). As with the MQPR, the Office of Institution Research records the Cumulative SQPR. Although SAT/ACT scores and High School GPA information is also available, we elected not to use this information because none of the survey respondents or interviewees mentioned pre-Academy performance as part of their consideration in the striper selection process.

The variable we have chosen that measures cognitive ability in midshipmen is CUMAQPR. The reasoning behind choosing to measure this variable at the end of the spring semester of a midshipman's 2/C year is the same for the variable CUMMQPR. Table 2 shows the descriptive statistics for CUMAQPR. Figure 4 (page 59) shows a frequency distribution for CUMAQPR with a normal curve.

Table 2.   Descriptive Statistics for CUMAQPR

	CUMAQPR
N	3822
Mean	2.89
S.E of the Mean	.00805
Median	2.8500
Mode	2.94
Std. Deviation	.49760
Minimum	1.74
Maximum	4.00

Figure 4.   Frequency Distribution of Cumulative AQPR with Normal Curve
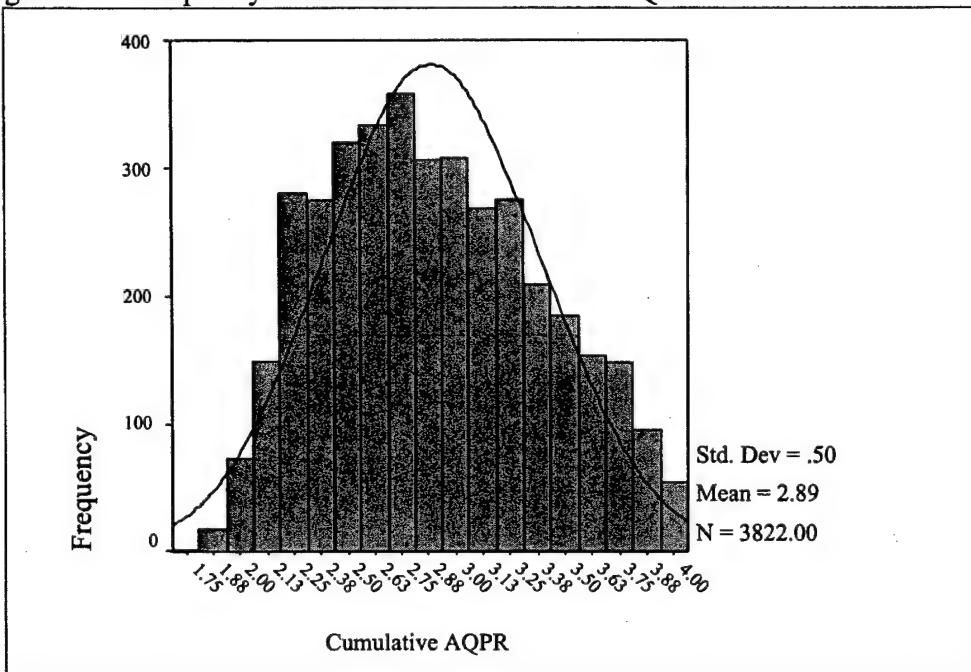
3.   "Proven Leaders"

The qualitative data showed that many of the decision makers look for proven leaders. There are many possible way to measure this at the Naval Academy, such as presidents of Extra Curricular Activities and having been in charge of special projects. However many of these roles also tend to fall to 1/C, and may or may not even be observed by decision makers. Although some of these might be recorded in the data warehouse—such as club presidents—only the second class leadership positions have been consistently recorded. Further, all of these positions were opportunities to demonstrate leadership ability prior to consideration for a striper position.

IR records the ten possible 2/C billets in the field column that they record the 1/C billets. They include the Platoon Sergeants, Company Drill Sergeants, Company First Sergeants, Battalion Admin Chiefs, Battalion Drill Sergeants, Battalion Sergeants Major, Regimental Sergeants Major, Brigade Parade Sergeants, Brigade Drill Sergeants, and Brigade Sergeants Major. The researcher developed a scoring system to create an ordinal variable to measure whether or not a midshipman held any of these positions. We

designed the variable to measure the greater visibility and responsibility that comes with the more senior-ranking 2/C positions, both within each unit at that level and between the different command levels.

We based the score, called BLTSCR2C, on a four-point system, since there are four command levels: Brigade, Regimental, Battalion, and Company. The Brigade Sergeants Major received a score of four points, the regimental Sergeants Major three points, and so on. It is possible for a 2/C to hold different billets between two semesters or for some billets to have a yearlong term, so we therefore summed the individual semester scores for each midshipmen if they fell into this category to create the final score, which is how we arrived at scores greater than four. We based this decision on the argument that increased time in a position of leadership will increase a student's visibility to decision makers—particularly if they have done a good enough job to fill a second position or continue in a two-year term—thus increasing their chances of selection as a striper. There are other 2/C billets, such as platoon sergeants, drill sergeants at the different command levels, and admin chiefs. We excluded midshipmen filling these billets from BLTSCR2C, however. These billets are administrative in nature, do not have the same level of leadership responsibilities and opportunities, and are not as visible to decision makers.

To create the variable, we sorted striper data alphabetically by rank. All 2/C ranks were then isolated and moved into a new data file for ease of handling. We scored them through a combination of sorting, filtering, and recoding using functions inherent in SPSS. Once we assigned every billet a score, we restructured the data to create a unique case for each midshipman who held a 2/C billet. We created the final variable, BLTSCR2C, by arithmetically adding the scores when a midshipman held more than one position. Midshipmen who did not hold a 2/C billet scored a "0." Scores then ranged from zero to six.

Table 3 (page 61) contains a frequency distribution for BLTSCR2C. Note that the score on the left reflects that some midshipman held more than one position as discussed in the method used to determine the score. The 312 2/C leadership positions reflected by this data were held by 307 individuals. The 194 midshipmen from these four cohorts

holding 1/C striper positions represent an approximate 60% decrease in the number of billets available to them as 1/C as compared to when they were 2/C.

Table 3.   Frequency Distribution for BLTSCR2C

BLTSCR2C Score	Frequency	Percent
0	3515	92.0
1	234	6.1
2	48	1.4
3	16	.4
4	7	.2
5	1	.0
6	1	.0
Total	3822	100.0

4.   Demographic Distribution

Recall from Chapter III (page 45) that Captain Parker, the Deputy Commandant of Midshipmen, stated that "diversity" amongst the stripers is a concern of the selection board. In this context, diversity is not limited to gender and ethnicity, but also other variables, such as varsity athlete status, major group (he specifically mentioned not wanting "all engineers" for stripers), and battalion. The selection process itself attempts to ensure goals of diversity are being met. In part, it does this by selecting a diverse selection board; the Deputy Commandant can alter the midshipmen membership of the board each semester if necessary. Note that quotas are specifically not used anywhere in the selection process (G. Parker, Personal Communication, February 20, 2003).

Three demographic factors are of concern to the administration when selecting stripers: gender, ethnicity, and varsity athlete status. All three of these statuses are included in the model. Although it is extremely difficult to statistically prove or disprove a bias for or against a particular group, it should *generally* be expected that the coefficients in the proposed model should be close to zero and not statistically significant if Captain Parker's goals of having a diverse group of stripers are being met. This section will explain the definition of the values used to test the diversity hypothesis

We created a "dummy variable" called FEMALE to measure gender distribution where female = 1 and male = 0. In this sample, 14.7% are female. We created a second dummy variable, MINORITY, where all non-Caucasians = 1 and Caucasians = 0 to measure ethnicity. Only 18.8% of the sample is a member of a minority group.

Within the Office of Institutional Research, it is a generally accepted practice to measure varsity athlete participation as "having earned a letter in their respective sport" (L. Mallory, Personal Communication, December 2002). They do this primarily because it includes only those athletes who have put in the significant amount of time in order to earn the letter. It also excludes the coaches, managers, and trainers for teams (Data Dictionary, February 22, 2002), who may or may not have participated fully in their respective sports. This field representing the award of a varsity letter is defined as a "yes" or "no" response for the duration of a midshipmen's tenure at the Naval Academy, so it is not possible to determine when the letter was earned (Data Dictionary, February 22, 2002). For purposes of simplicity, we decided to use the varsity letter status as an indicator of participation in varsity athletes, rather than attempt to determine each individual's exact varsity status at the time they were eligible for a striper position. We recorded varsity letter status into a third dummy variable, VLTRWNR, which equals "1" for varsity letter winner, and equals "0" otherwise. Twenty-five and half percent of the sample earned a varsity letter.

E. THE "UNDESIRABLE" INDEPENDENT VARIABLES

To summarize the qualitative data, decision makers indicated that midshipmen with "bad grades" and "poor military performance" were not likely to select as stripers. To further breakdown the components of military performance, many decision makers identified "conduct problems," "honor offenses" and "PRT problems" as traits detracting from a potential striper candidate. The data warehouse contains additional data that can be used to address "poor grades" and "conduct problems," but reliable data on honor offenses and PRT scores are not available.

1.   The Academic Board Score

Although CUMAQPR may account for "poor grades" as a counter-indicator for a potential striper, some of the qualitative data in Chapter III suggested that having been to the Academic Board—and therefore at risk of being separated—was counted against a striper who was otherwise eligible for a striper position.   The data, however, is problematic.   The registrar's office manually recorded the data in varying formats.   The coding of the dispositions of the academic boards has changed frequently since 1999, although the historic coding has been corrected to reflect the current system (C. Morgan [Data Base Manager], Personal Communication, March 31, 2003).   Additionally, the reason an individual midshipman appeared at the Academic Board has not been reliably recorded; although it is principally for academic reasons, it could also be for military performance issues.

We designed a scoring system to take into account three considerations: (1) whether or not a midshipman came to the attention of the Academic Board, regardless of reason; (2) how recent the appearance had been; and, (3) how many times they appeared.

We received the data in a similar manner as the academic and military QPR information.   The variables represented a code and description of only the final disposition of each board.   We constructed the new variable, ACBDSCR, by first isolating the semesters in which a midshipman appeared before the board using the same method as in CUMMQPR, and then eliminating any appearances that occurred during their 1/C years.   We calculated the raw score by "reversing" the semester scores, resulting in a higher score meaning a more recent appearance, i.e. 3 if occurred during their 2/C year, 2 for their 3/C year, etc.   We recorded any semester score higher than "3" as a raw score of "1," equating the board to having happened during their 4/C year[11].   We summed the restructured data, creating the final ACBDSCR.   We coded any midshipman who did not appear before the board as a "0."   Table 4 (page 64) shows the frequencies for each computed score.   Figure 5 shows the distribution of the scores compared to a normal curve; note that it does not have a normal distribution.   There were 770 seventy unique

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[11] This could occur if a midshipman was discharged and subsequently readmitted with a new alpha code (MIDID) and the record of their original appearance—including the original date—at the Academic Board was transferred to their record under the new alpha code.

midshipmen in this sample (20.1%) who appeared before the academic board at least once prior to the end of the Spring Semester of their 2/C years who were not separated as a result of their board(s).

Table 4.   Frequency Table for ACBDSCR

ACBDSCR Score	Frequency	Percent
0	3052	79.9
1	204	5.3
2	163	4.3
3	126	3.3
4	95	2.5
5	48	1.3
6	50	1.3
7	25	.7
8	18	.5
9	16	.4
10	6	.2
11	3	.1
12	12	.3
13	1	.0
14	2	.1
15	0	.0
16	1	.0
Total	3822	100.0

Figure 5.   Frequency Distribution of ACBDSCR with Normal Curve

Std. Dev = 1.77
Mean = .7
N = 3822.00

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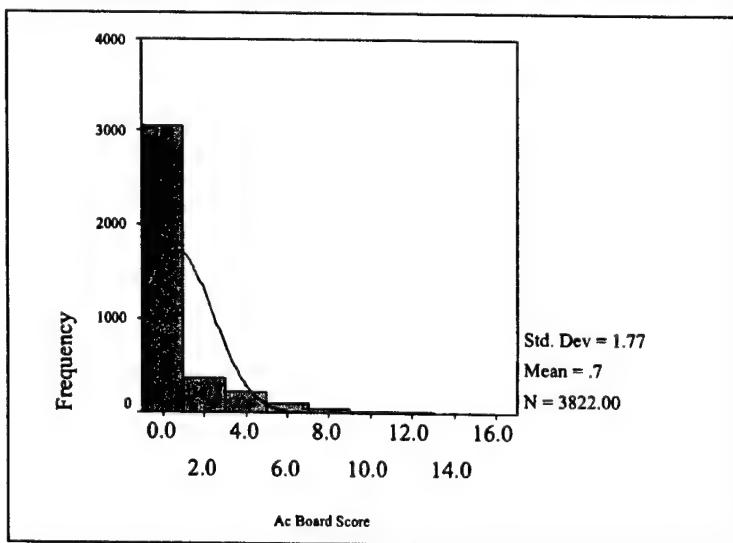
2.   The Conduct Score

Measuring conduct issues also presented some difficulties. As mentioned above, the data for conduct offenses has not yet migrated into the data warehouse; it is maintained in the archival portion of the "MIDS" system. The conduct system at the Naval Academy is complex at best, but a basic understanding of the process is required to understand the scoring used in this variable. It is derived from COMDTMIDNINST 1610.2B of 27 October, 2002, the Administrative Conduct System Manual. When a midshipman is charged with a conduct offense, a series of steps is initiated that proceed through investigation, adjudication, and punishment upon a "guilty" finding. The punishments available include but are not limited to the awarding of demerits, marching tours, a loss of privileges, and being restricted to the barracks. The degree of available punishment is based on the nature of the offense and the adjudicating authority; the more heinous the crime, the more senior the adjudicating authority and the greater the maximum punishment. Note that the maximum number of demerits awarded in any one case is 100.

We made a basic assumption in constructing the conduct variable such that the majority of guilty cases were at least awarded demerits. Of the 10,547 closed cases involving the classes of 1999-2001, only 880, or 8.3%, were not awarded demerits, making this an inherently sound assumption. To construct the TDEMOS variable, we summed the total number of demerits for each MIDID. Total demerits ranged from zero to 525. Table 5 (page 66) shows the descriptive statistics for TEDEMOS. Note that data in Table 5 reflects the descriptive statistics of the entire sample, not just those awarded demerits. The mean number of demerits awarded to midshipmen subject to potential disciplinary action for this period was 62.16 demerits (S.E. = 1.169). Note that this mean includes subsequently discharged midshipmen.

Table 5.   Descriptive Statistics for TDEMOS

	TDEMOS
N	3822
Mean	42.67
S.E of the Mean	1.016
Median	15.00
Mode	0
Std. Deviation	62.821
Minimum	0
Maximum	525

3.   Other Considerations

As mentioned above and in Chapter III, decision makers tend to avoid selecting midshipmen with honor concept violations and who have PRT issues.   Physical Education Department's Marking Office maintains PRT data, but is not archived in a verifiable format.   PRT scores are, however, factored into the semester MQPR grade, so we believe that CUMMQPR will sufficiently account for this type of deficiency.   Further, if the data was available and included, it might create multicollinearity issues for similar reasons.

With respect to honor concept violations, this data is available to a very limited extent; it is a midshipmen-run system that stringently respects the privacy of the accused. However, once the Commandant of Midshipmen affirms an "in violation" finding, 100 demerits are automatically and permanently added to the individual's record, regardless of ultimate disposition, vis-à-vis discharge or retention (A. Wieder, Personal Communication, April 2003).   Therefore, we believe that TDEMOS will likely also measure honor violations.

Certainly many other things can potentially account for why or why not a midshipman might be selected as a striper.   Micheli's model (1998) included ten variables, for example.   However, we believe that, based on the qualitative data we have gathered, that the described variables will produce a sufficient model.

F.   DESCRIPTIVE DATA ANALYSIS

This section will take the eight variables described above and analyze each of them from the perspective of those selected as stripers. To a lesser extent, it will then also examine some of the inter-relationships between the different variables. The primary statistical methodology used in this section to examine the stripers is the T-Test. The purpose is ultimately to provide a basic statistical description of the stripers while maintaining objectivity, and to set the stage for Chapter V.

Prior to commencing this portion of the data analysis, it was necessary to create two additional new variables for use in variable testing only. Since ACBDSCR and BLTSCR2C are ordinal variables with more than two values, testing their statistical means using t-tests would be relatively meaningless (i.e., a midshipman could not have held 2.4 2/C billets, or appeared before 1.76 academic boards). It is also difficult to use the scores in their original forms in SPSS to group variables for simple counts (e.g., "how many midshipmen selected as stripers appeared before the Academic Board?") Therefore, we created two new "dummy-coded" variables, ACBDTEST and BLTSCTES, to measure the presence or absence of the conditions we intend for their respective original variables to measure in the multivariate model. For both new variables, a score "0" represents the absence of the particular trait and "1" represents the presence of it. We intended these two variables for use as grouping variables and in nonparametric correlations, as neither variable is normally distributed (Morgan, Griego, and Gloeckner, 2001).

1.   Military and Academic Performance

As the t-test in Table 6 (page 68) shows, stripers have significantly ($p < .001$) higher academic (CUMAQPR) and military performance (CUMMQPR) averages than non-stripers. This test provides strong initial support for the decision makers' notion that stripers, in general, have better grades and are the top performers in their class. The mean score for CUMAQPR is 3.33, which is nearly a half-point (.46) higher than for non-stipers. The mean CUMMQPR is 3.45, which is .38 points higher than for non-stripers.

Table 6.   T-Test for Differences in Means of CUMAQPR and CUMMQPR, by Stripers and Non-stripers

	Mean	Standard Deviation	Absolute Mean Difference	Significance
CUMAQPR				
Non-Stripers	2.87	.49	0.46*	.000
Stripers	3.33	.47		
CUMMQPR				
Non-Stripers	3.07	.34	0.38*	.000
Stripers	3.45	.24		

* p < .01

2.   2/C Leadership Positions

Sixty of the 194 stripers (31%) in this population had prior experience in a 2/C leadership position. This relatively small percentage likely accounts for the weak but significant positive correlation between the 2/C test variable (BLTSCTES) and the stripers (STRIPER) (ρ = .195, p < .001). This also supports the idea that stripers are selected for being "proven leaders."

3.   Demographic Variables

We performed a t-test to compare the demographic variables. Table 7 (page 69) presents the results. Given that these are binary variables, the "mean" of the variable represents the proportion of the sample that falls in one category or another. For example, 23% of the stripers are female, vs. 14% of non-stripers. Note that only the results for the differences in females and varsity athlete variables are statistically significant. That is, a larger percentage of stripers is female and a lower percentage is varsity athletes

An initial assessment of this data suggests that women are selected in greater numbers as stripers while varsity athletes are less likely to be selected. Since the results presented in Table 6 suggest that academic and military performance grades figure so

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prominently in the selection of stripers, it is worthwhile to examine how the two demographic groups differ on those two variables by using another t-test. We present these results in Table 8 (page 70).

Table 7.   T-Test for Difference in Means of FEMALE, MINORITY, and ETHNIC, by Stripers and Non-stripers

	Mean	Standard Deviation	Absolute Mean Difference	Significance
FEMALE				
Non-Stripers	.14	.35	.09*	.001
Stripers	.23	.42		
MINORITY				
Non-Stripers	.18	.39	.01	.664
Stripers	.17	.38		
VLTRWNR				
Non-Stripers	.26	.44	.09*	.001
Stripers	.17	.38		

* $p < .01$ NOTE: See text for an explanation of the mean for these variables.

The results from this test show that AQPR and MQPR are essentially the same for males and females and for varsity athletes vs. non-varsity athletes. The only significant difference ($p < .01$) is the .10-point lower cumulative AQPR between for athletes vs. non-athletes. This *may* partially explain why varsity athletes are less likely to select at a lower rate for striper positions between 1999 and 2002. Another possible explanation may lie in the 2/C leadership opportunities; women, although women represented 14.7% of the sample, they held only 10% of the 2/C billets ($p < .01$). We obtained this statistic by conducting a t-test on gender using the BLTSCRTES as the grouping variable. Therefore, this possibility does not fully explain tendency for women to be selected either.

Table 8. T-Test for Differences in Means of CUMAQPR and CUMMQPR, by Gender and Varsity Athlete Status

	Mean	Standard Deviation	Absolute Mean Difference	Significance
CUMAQPR				
Males	2.89	.50	.00	.798
Females	2.89	.47		
Non-Athletes	2.92	.50	.10*	.000
Athletes	2.82	.49		
CUMMQPR				
Males	3.09	.34	.02	.274
Females	3.07	.34		
Non-Athletes	3.08	.34	.02	.154
Athletes	3.10	.34		

*p < .01

4. Academic Board and Conduct Scores

By using ACBDTEST, we found that only 7%, or 13 of the 194 stripers, had come to the attention of the Academic Board at least once during these first six semesters at the Naval Academy. This compares to 21% of the brigade who were not stripers (mean difference = 14% points, p < .01). To look at it a slightly different way, only 2% of the 770 midshipman who would come to the attention of the Academic Board at least once would go on to become stripers. Recall that the qualitative data suggested that many decision makers would look poorly on candidates with *recent* academic boards. This implies that an academic board does not completely remove a candidate from consideration. Even though this particular cut on the data does not measure the recency of an academic board, it does confirm that having been to an academic board does not automatically eliminate all midshipmen from consideration for stripes. However, it suggests that having been to academic board is an extremely rare occurrence for stripers.

Table 9 (page 71) displays the result of a t-test for mean demerits awarded to stripers and non-stripers. As is clearly shown, stripers tend to have significantly better conduct records, although they are not necessarily perfect. Once again, this variable does

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not measure the recency of conduct offenses, only a general measure of conduct over a four-year period. It also further affirms that a midshipman does not have to have a perfect record to become a striper, but one's record does have to be considerably above average.

Table 9.   T-Test for Differences in TDEMOS by Stripers

	Mean	Standard Deviation	Absolute Mean Difference	Significance
TDEMOS				
Non-Stripers	44.21	63.85	30.22*	.000
Stripers	13.99	25.34		

* p < .001

These variables may also shed some light on the gender and varsity athlete anomaly addressed in the previous section. In other words, if an appearance at an Academic Board and a high number of demerits tends to limit a midshipman's chances for selection as a striper, perhaps woman have fared better in these two areas while varsity athletes have fared worse. We present the results of this t-test in Table 10 (page 72). As can be seen, this hypothesis is supported at least for athletes; however, the results are statistically insignificant and therefore do not appear to offer any potential explanations for these two observed anomalies.

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Table 10.   T-Test for ACBDSCR and TDEMOS, by Gender and Varsity Athlete Status

	Mean	Standard Deviation	Absolute Mean Difference	Significance
ACBDSCR				
Male	.68	1.81		
Female	.68	1.52	.00	.947
Non-Athletes	.66	1.75		
Athletes	.73	1.83	.07	.289
TDEMOS				
Male	43.03	63.91		
Female	40.58	56.11	2.45	.349
Non-Athletes	42.05	62.19		
Athletes	44.50	64.64	2.45	.294

G.   CHAPTER SUMMARY

This chapter's main purpose was to present the data that will be used to answer the third and fourth research questions, "Can a multivariate statistical model be developed to predict who is selected as a striper?" which is the focus of Chapter V, and "What are the strengths and weaknesses the striper selection process?" It documented the source the data, explained the design and coding of the dependent and independent variables, and examined some of the individual relationships between them. Finally, it explored the inter-relationships between four of the ordinal and scalar independent variables.

We obtained data from the Naval Academy Office of Institution Research for the Naval Academy classes of 1999-2002, and used to form the dependent variable, striper selection, and eight independent variables. The proposed positive independent variables are cumulative Military Quality Point Rating (CUMMQPR) and cumulative Academic Quality Point Ratio (CUMAQPR), as measured at the end of the spring semester of each midshipman's second class year, which were designed to measure military performance and cognitive ability, respectively. In addition, a billet score (BLTSCR2C) was created to measure prior leadership experience based on top billets held by midshipmen during

their 2/C year. We based three variables on demographics measured by the Naval Academy: FEMALE, MINORITY, and status as a varsity athlete (VLTRWNR). Finally, two negative independent variables are proposed, total demerits to measure poor military performance specifically in the area of conduct, and an Academic Board score, designed to measure the frequency and recency of an individual midshipman's appearance before the Academic Board.

When compared individually to the stripers, each of the positive and negative independent variables concurs with the preliminary data in chapter three. The stripers appear to be ethnically diverse, although there seems to be an over-selection of woman and under-selection of varsity athletes.

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V. ESTIMATING A MULTIVARIATE STRIPER PREDICTING MODEL

The third research question addresses the construction of a multivariate model to predict striper selection based on the criteria we have developed thus far. Micheli (1998) constructed a predictive model using more variables than presented here, including many that related to the pre-USNA background traits of midshipman. We, however, have sought to create a model that uses the variables that represent the traits and characteristics used by decision makers selecting stripers. This chapter specifies and estimates a model based on the selection criteria for stripers as defined by Naval Academy decision makers.

A. MODEL DEVELOPMENT

Through surveys, interviews, and non-participant observation, which was detailed in Chapter III, we found that the decision makers at the Naval Academy who select stripers value certain positive qualities in the candidates, discount other qualities, and are committed to choosing a diverse group. The desirable qualities of stripers include top military performance, good grades, and proven leadership ability. The blemishes that can hurt a potential striper candidate include repetitive conduct trouble and multiple or recent appearances before the Academic Board. The principal demographic traits the selection board currently concerns itself with are gender, ethnicity, and status as a varsity athlete.

We chose logistic regression as the primary method to test the relationships. The strength of logistic regression is that it offers a probabilistic model that predicts the outcome of a binary variable, in this case selection as a striper (STRIPER) (Pyndick & Rubinfeld, 1991; Bowman, 1998; Micheli, 1998).

Based on the information gathered from Academy decision makers, we developed the logistic regression model for striper selection to test the following hypothesis:

> *Midshipmen selected to be stripers are the top military performers, have better-than-average grades, are proven leaders, lack certain other negative traits, and are representative of the demographic characteristics of the brigade as a whole.*

The model to test this hypothesis can be written as follows:

$$\text{Selection as a Striper} = \beta_0 + \beta_1{}^D \text{(Desirable Qualities)} + \beta_2{}^U \text{(Undesirable}$$
$$\text{Qualities)} + \beta_3{}^{DM} \text{(Demographic Variables)} + E$$

Where the β's represent parameters we will estimate and E represents a random error term.

There are three null (H_0) and alternate (H_A) hypotheses that are embedded in the model. The first null hypothesis relating to military performance, academic grades, and proven leadership ability:

$H_0 1$: $\beta^D = 0$

$H_A 1$: $\beta^D > 0$

The second null relates to the effect of the undesirable qualities, demerits and Academic Board appearance:

$H_0 2$: $\beta^U = 0$

$H_A 2$: $\beta^U < 0$

Finally, the third null relates to demographics:

$H_0 3$: $\beta^{DM} = 0$

$H_A 3$: $\beta^{DM} \neq 0$

We proposed eight explanatory variables to represent the desirable (+) and undesirable (-) qualities and the demographics. CUMMQPR (+), CUMAQPR (+), and BLTSCR2C (+) represent the desirable traits. ACBDSCR (-) and TDEMOS (-) represent the undesirable traits. GENDER (?), ETHNIC (?), and VLTRWNR (?) represent the demographics. The dependent variable that represents selection as a striper is called STRIPER. Substituting these variables into the above equation yields

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$$\text{STRIPER} = f\ (\alpha + \beta_1{}^D \text{ CUMMQPR} + \beta_2{}^D \text{CUMAQPR} + \beta_3{}^D \text{BLTSCR2C} - \beta_4{}^U$$
$$\text{ACBDSCR} - \beta_5{}^U \text{TDEMOS} + \beta_6{}^{DM} \text{GENDER} + \beta_7{}^{DM} \text{ETHNIC} +$$
$$\beta_8{}^{DM} \text{VLTRWNR})$$

$\beta_1{}^D$ through $\beta_3{}^D$ are the coefficients of the desirable traits, $\beta_4{}^U$ and $\beta_5{}^U$ are the coefficients of the undesireable traits, and $\beta_6{}^{DM}$ through $\beta_8{}^{DM}$ represent the coefficients of demographic factors. In a logistic regression, the estimated β's represent the effect of a one-unit change of an independent variable, while holding all other variables constant, on the change in the log of the odds that an individual will be selected as a striper (Pyndick and Rubinfeld, 1991; Micheli 1998).

Defining the hypotheses in terms of these variables, a more rigorous statement of the first null hypothesis is:

H₀1: $\beta_1{}^D = \beta_2{}^D = \beta_3{}^D = 0$

We can then test if the coefficients of the "desirable traits" are jointly significant. Similarly, the second null hypothesis can be expressed as:

H₀2: $\beta_4{}^U = \beta_5{}^U = 0$

and the third null hypothesis is:

H₀3: $\beta_6{}^{DM} = \beta_7{}^{DM} = \beta_8{}^{DM} = 0.$

We test these hypotheses using the likelihood ratio test (LRT). The likelihood ratio test statistic (G_K) is formed by the equation:

$G_k = -2\ (\text{Log } L_{UR} - \text{Log } L_R).$

This can be simplified to

$G_k = (L_R - L_{UR})$

where L_R is the -2 Log Likelihood statistic produced by SPSS for the restricted model, and L_{UR} is the same statistic for the unrestricted model. In all cases, the "unrestricted" model includes the specific set of variables being tested, whereas the "restricted" model omits the specific set of variables. The statistic "G_k" has a χ^2 distribution, so significance

can be determined by using a chi-square table. For analysis, degrees of freedom equals the degrees of freedom in the unrestricted model minus the degrees of freedom in the restricted model. If "G_k" proves to be significant, we can reject the null hypothesis, suggesting that the variables we are testing are *jointly* significant (Menard, 2003).

B. MODEL ANALYSIS

The sample includes 3,822 former midshipmen from the classes of 1999 – 2002 who we believed to be eligible for selection as a striper during their first class year. In Table 11, we present the results of the unrestricted model using all eight of the desirable, undesirable, and demographic variables. We obtained our results using the binary logistic regression function in SPSS version 11.0. We set the classification cutoff to the mean of the dependent variable, STRIPER, which was .05 (Bowman, 1998).

Table 11. Baseline (Unrestricted) Logit Model of STRIPER Selection

Variable	Coefficient (β)	Significance	Exp(β)[a]
Constant	-15.230*	.000	-
CUMMQPR	3.458*	.000	31.760
CUMAQPR	.272	.272	1.312
BLTSC2C	.784*	.000	2.191
ACBDSCR	-.026	.827	.974
TDEMOS	-.009*	.005	.991
FEMALE	.973*	.000	2.646
MINORITY	.574*	.009	1.775
VLTRWNR	-.778*	.000	.459

Summary Statistics	
-2 Log Likelihood:	1157.145
Chi Square/(df):	377.337*/(8)
Nagelkerke R^2:	.284

Notes: * p < .001

    a. Exp (β) provides the effect of a one-unit change in X_n on the odds of the outcome of the dependent variable when all other independent variables are held constant.

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To test the three null hypotheses, we estimated restricted version of the baseline model. We then compute likelihood ratio tests for joint significance of the three sets of variables. The L values of the -2 Log likelihoods from the respective models are shown in Table 12.

We created the restricted model to test the first null hypothesis, which states that the "desirable" variables are not jointly significant, by removing CUMMQPR, CUMAQPR and BLTSCR2C from the regression and re-estimating the model. The first row of Table 12 provides the -2 Log likelihood for this restriction (L_R), which is 1413.61. G_k therefore equals 1413.61 minus 1157.15 (from Table 11), or 256.46, with three degrees of freedom. Using a chi-square table, we find the critical chi-square value for P = .000 for two degrees of freedom is 13.82, and therefore for the first restricted model, P < .001. We can reject the null hypothesis, and conclude that the three "desirable" variables in our model—Military QPR, Academic QPR, and 2/C leadership experience— are jointly significant in describing the stripers at the Naval Academy. Since the three β's associated with the desirable traits are all positive, we can likely accept the first proposed alternate hypothesis, H_A1, which implies that better performance, better grades, and more experience increases the odds for selection as a striper.

Table 12.	Results of Likelihood Ratio Tests		
Restricted Model	L_R	G_K (L_R- L_{UR})	Degrees of Freedom
H_01	1413.61	256.46**	3
H_02	1166.81	9.66*	2
H_03	1193.84	36.69**	3

*P < .01
**P < .001

We conducted a similar procedure for the second hypothesis, this time removing the variables that measures total demerits (TDEMOS) and appearances before the Academic Board (ACBDSCR). As shown in row 2 of Table 12, L_R for the second restricted regression is 1166.81, with two degrees of freedom. Therefore, G_k equals 9.66. The critical chi-square value for P = .01 from a chi-square table is 9.61, so P is slightly

less than .01. Although not as strong a result as in the first LRT, G_k is significant enough to reject the second null hypothesis (H_02). Both of the β's associated with the undesirable traits are negative, so we choose to accept the second alternate hypothesis (H_A2). In other words, the model suggests that the undesirable variables are jointly significant, and an increase in demerits and more frequent or recent appearances before the Academic Board will reduce a midshipman's odds of selection.

In the third procedure, we limited the regression model by eliminating the variables that measure gender (FEMALE), participation in a varsity sport (VLTRWNR) and ethnicity (MINORITY). As shown in row 3 of Table 12, L_R equals 1193.84 with two degrees of freedom. Therefore, G_k equals 36.69, which has a P-value < .001. We reject the null hypothesis, and accept the alternative that the demographic variables are jointly significant in determining the odds of striper selection. Two of the β's associated with the demographic variables are positive while the third is negative, so we cannot *generalize* whether or not the measured demographic variables increase or decrease the odds of selection as we have with the other two null hypotheses.

Another method we can use to assess the effectiveness of our proposed model is a classification table (Menard, 2002). To generate this table, SPSS uses the resulting model to predict the desired outcome, and compares the predictions against the actual outcomes. It presents the result as percentages, which we show in Table 13 (page 81). Bowman (1998) recommends setting the classification cutoff to the mean of the dependent variable to maximize the correct number of predictions, particularly when it is especially small or large as is the case here. This model performs relatively well with a success rate of 75.7%, particularly in consideration of the dramatically small number of stripers selected.

Menard (1998) also recommends using the Hosmer and Lemehsow test statistic to evaluate a logistic regression model's goodness of fit. The Hosmer and Lemeshow Test divides the sample deciles based on predicted probabilities, and then tests the null hypothesis that there is no significant difference between the observed and predicted values of the dependent variable. If the test statistic is significant, we reject the null hypothesis, which implies that the differences between observed and predicted values are

due to chance. Therefore, the test statistic should be insignificant in a well-fit model. The test statistic has a χ^2 distribution and eight degrees of freedom. In the case of our model, the Hosmer and Lemeshow test statistic is 13.02, which results in a P of .108. We therefore fail to reject the null hypothesis, implying that the model is a good fit.

Table 13.   Classification Table for the Unrestricted Striper Selection Model

| | | Predicted | | |
| | | Selected as a Striper | | Percentage |
Observed		No	Yes	Correct
Selected as a	No	2737	891	75.4
striper	Yes	37	157	80.9
Overall Percentage				75.7

Classification Cutoff: .05

One of the disadvantages of logistic regression is the lack of good measures of model fit. The R^2 statistic accomplishes this in an ordinary least square (OLS) regression. The existence of an equivalent statistic for logistic regression is the subject of much debate, and there are many proposed measures available (Menard, 2002). We have chosen to report the Nagelkerke R^2, shown in the bottom of Table 11 (page 78). This statistic is an improvement on the Cox and Snell R^2 (Menard, 2002), and takes the approach of simulating the R^2 of an OLS regression (Cox and Snell, 1989). The Nagelkerke R^2 is considered a very rough estimation of effect size, however; we display it merely for general information (Menard, 2002).

C.   RESULTS ANALYSIS

The most appropriate method to examine the effects of individual independent variables in a logistic regression is with the "marginal effect" technique (Bowman, 1998). The approach examines the change in odds of the expected outcome of the dependent variable given a unit change in the independent variable, while holding all other variables constant. SPSS expresses one form of the marginal effects as a single factor, called the "Exp (β)" statistic (Menard, 2002). An Exp (β) value that is greater than one corresponds

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to an increase in the odds of the predicted outcome as the independent variable increases by one unit. Likewise, a value less than one correspond to a decrease in the odds of the event with increasing values of the independent variable. Table 11 shows the Exp (β) values for each of the independent variables in our model.

An alternate method to express the marginal effects is as the *change in probability of the predicted outcome per unit change of the independent variable*, or dp/dx. This can be calculated using each calculated coefficient, β_i, by

dp/dx = (β_i) (p) (1-p)

where p is the overall probability of the event measured by the dependent variable occurring in the given sample. In our case, p, which is the probability of a midshipman being selected as a striper, is .05.

We first consider the marginal effect of a midshipman's military performance grade (CUMMQPR). MQPR is calculated in hundredths (.01) of a point. Therefore, our model implies that a .01 increase in CUMMQPR at the end of a midshipman's 2/C year means that he or she is nearly 32 times more likely to select as a striper! Using the dp/dx approach, a .01 increase in of CUMMQPR increases a midshipman's probability of selection by 16%. This is certainly indicative of the level of competition for selection to striper positions. Further, when compared to the other seven Exp (β) values, CUMMQPR is a far more "powerful" variable.

At first, these numbers seem very high—almost improbable—particularly when compared to the other independent variables. However, recall from Chapters III and IV that the military quality point rating directly measures the majority of the traits that decision makers value the most in a potential striper candidate. For example, high physical readiness test scores, high aptitude for commission grades, a propensity to stay out of trouble, and high Naval Leadership classroom grades. In that light, it makes sense that a midshipman who is performing at the top of all of those categories—the very categories the Naval Academy uses to measure leadership potential—should actually be far more likely to be selected as a leader.

Demerits are measured as whole integers, although they are awarded in multiples of five. To examine the change in odds resulting from one "unit change" of demerits (TDEMOS), it is necessary to raise the Exp (β) value to the fifth power, or .956. The percent decrease in probability of selection for having five additional demerits is considerably less than zero, although demerits are seldom awarded in small increments.

Interpreting the Exp (β) values for the two variables we created to measure appearances before the Academic Board and 2/C leadership experience, ACBDSCR and BLTSCR2C, can be a bit tricky. They are nominal variables that have whole integer values. For ACBDSCR, an increase in value can mean more board appearances or the appearances were more recent; the number itself does not directly correspond to a specific measure. Similarly, an increase in BLTSCR2C can mean a midshipman held a higher-ranking billet, more than one billet, or a semester-long billet.

Since we found the demographic variables to be jointly significant (page 80), we will briefly highlight their marginal effects. From Table 11 (page 78), the model suggests that, all other variables being equal, being female increases a midshipman's chance of selection by 4.6% to be selected as a striper, being a non-Caucasians equates to a 2.7% increase, and varsity letter-winners have a 3.7% decrease in probability of selection. Recall, however, that even a .01 change in CUMMQPR negates the marginal effects of any of these demographic considerations with its 16% increase in probability for selection.

We next turn to the significance values reported in Table 11 for each independent variable. SPSS calculates these values using the Wald statistic, which is the squared ratio of β to its standard error. It has a χ^2 distribution with one degree of freedom. Menard, however, cautions (2002, p. 43) "that for a large β, the estimated standard error is inflated, resulting in failure to reject the null hypothesis when the null hypothesis is false." This is often called a Type II error, or a failure to detect a relationship that exists.

For the two statistically insignificant variables, CUMAQPR and ACBDSCR, Menard's warning does not appear to apply. However, the qualitative data in Chapter III suggests a relationship between the independent variables and the dependent variables,

which the likelihood ratio test supports, yet the Wald tests suggest that there is no relationship.

We therefore looked for an alternate explanation for this possible Type II error. It is likely that CUMAQPR and CUMMQPR are highly correlated (grades received in the professional courses are credited towards both averages) and in practice (something akin to the Halo Effect when performance grades are heavily influence by academic grades). Further, someone who has spent time in front of the Academic Board (high ACBDSCR) probably has poor classroom grades (low CUMAQPR).

The best way to test these ideas is with correlation tests (Schwab, 1999). The Pearson correlation coefficient assumes a normally distributed variable (Morgan, Griego, & Gloeckner, 2001). Recall from Chapter IV, that CUMMQPR and CUMAQPR are normally distributed (pages 57 and 59, respectively), but ACBDSCR is not (page 64). Spearman's rho is the recommended coefficient for testing correlations between non-parametric variables, such as ACBDSCR (Morgan, Griego, & Gloeckner, 2001). However, we compared both the Pearson score and Spearman's rho for all three variables, and they were not noticeably different. Therefore, we will report only the Pearson scores since two of the three variables are normally distributed. We present the results in Table 14.

Table 14.   Pearson Correlation Coefficients for CUMAQPR, CUMMQPR, and ACBDSCR

		CUMAQPR	CUMMQPR	ACBDSCR
CUMAQPR	Pearson Correlation Sig. (2-tailed) N	1 .000 3822	.720* .000 3822	-.489* .000 3822
CUMMQPR	Pearson Correlation Sig. (2-tailed) N		1 - 3822	-.405* .000 3822
ACBDSCR	Pearson Correlation Sig. (2-tailed) N			1 - 3822

* $p < .001$

As Table 14 shows, cumulative MQPR and AQPR have a strong, positive and significant correlation (r = .720, p < .001). In other words, a midshipman with a high military QPR likely also has a high academic QPR, and vice versa, confirming our suspicions. This is not very surprising given that Horne (1970) and Jones (1938) among others linked cognitive ability (measure here by CUMAQPR) with leadership potential (an assumption of high CUMMQPR). Although not wholly accurate to compare MQPR and AQPR with the Academic Board score (two parametric variables and a non-parametric variable), a moderate, negative relationship is suggested between each of the grade measures and board appearances. That is, the more likely a midshipman is to have appeared before the Academic Board, the more likely he or she willhave low military and academic grades, and vice versa.

The correlations between MQPR, AQPR, and the Academic Board Score are significant and strong such that there may be multicollinearity issues within the logistic regression model (Menard, 2002, Schwab, 1999). This likely explains the insignificance of ACBDSCR and CUMAQPR in our model. However, since the Likelihood Ratio Test for the first and second null hypotheses showed that the desirable and undesirable variables jointly behaved as expected, we remain satisfied with our unrestricted model as it stands.

To further test for the effects of collinearity between CUMMQPR and CUMAQPR, we estimated another model without CUMMQPR. In this model, which also passes the Hosmer and Lemshow test, the estimated coefficient for CUMAQPR = 1.508 with a P-value < .001, and Exp (β) = 4.518. A .01 increase in CUMAQPR in this model will result in a 7.2% increase in the probability of selection as a striper. There were no remarkable differences in the remaining six variables between this version of the model and its baseline version These results suggest that CUMAQPR alone is likely a very important consideration in the selection of stripers, but it is dominated by CUMMQPR in a model in which the two are both present.

As a final discussion point, we return to the unexpected results relating to the demographic variables. Recall the results of the first two LRTs were consistent with what we expected based on the qualitative data and preliminary data analysis in Chapter

IV, but the third was not. The decision makers surveyed and interviewed indicated that demographic factors do not influence the selection process, yet the model and the preliminary data analysis suggest that they are important factors.

One explanation may come from history. Micheli's results (1998, p. 95-96), at least for females and minorities, were opposite in sign from ours, although similar in magnitude, for the classes of 1980-1985. In his final model, the coefficient for SEX (which equaled FEMALE in our model) equaled -.8246 ($p < .01$), and the coefficient for MINORITY was -.2758 (insignificant, $p > .05$). The equivalent to VLTRWNR in his model, NLETTER, was slightly negative (-.1223) in his initial model, but it was insignificant and subsequently left out of his final model. In this light, our model may have detected a subtle change in culture at the Naval Academy, particularly when one notes that the class of 1980 included the first females admitted. The process may also be cyclical, but two data points are obviously not sufficient to test this hypothesis.

Another possible explanation may be in the construction of the selection board itself. Captain Parker assumes that people *tend* to select people who are most like themselves, and he therefore attempts to ensure diversity amongst the stripers by structuring a diverse selection board. We did not address the structure and composition of the selection boards that actually selected the stripers studied in this thesis. If Captain Parker's assumption is correct and his approach valid, then the make-up of the stripers may simply have reflected the composition of the board at the time.

A final explanation we offer could be that the observed relationship in our model is the result of something analogous to the "Hawthorne Effect." The implication of this analogy is that it would not matter *what* those decision makers thought about the different groups; that they thought about them at all was enough for us to observe a statistical relationship.

D.   CHAPTER SUMMARY

In this chapter, we addressed the third research question pertaining to modeling the striper selection process based on the selection criteria identified by decision makers at the Naval Academy. We proposed a logistic regression model primarily based on a

principal hypothesis generated from the feedback received from key decision makers in the striper selection process. From that model, we then formulated three hypotheses that each related to one of three categories of predictive variables. We categorized the variables used in our initial model with respect to the characteristics and traits of striper candidates as "desirable," "undesirable," and "demographic." In this model, our hypotheses were that the β coefficients for the desirable traits would be significant and positive, they would be significant and negative for the undesireable traits, and equal to or near zero (i.e., insignificant) for the demographic variables.

We constructed a logistic regression model based on eight variables: CUMMQPR, CUMAQPR, BLTSCR2C, TDEMOS, ACBDSCR, FEMALE, MINORITY, and VLTRWNR. We then tested our three null hypotheses using likelihood ratio tests (LRTs). We rejected the three null hypotheses based on the statistically significant results of the LRTs. Based on the qualitative data, the rejection of the first two null hypotheses relating to the desirable and undesirable characteristics and traits of midshipmen and accompanying signs of the coefficients was as expected. However, the rejection of the third null hypothesis—that demographic variables play no part in striper selection—was not expected.

We presented additional "goodness of fit" statistics as evidence of an effective model. The model produced a predictive classification summary with an overall success rate of 75.7%, which is relatively strong for a dependent variable with very small odds of occurring. The Hosmer and Lemeshow statistic, a test of the significance of the model's ability to predict outcomes, also supported a good fit for the data.

In evaluating the individual variables, we found that Military QPR was by far the strongest predictor of selection as a striper. There may be issues with multicollinearity between Academic QPR, the Academic Board score, and other variables; however the LRTs and overall model performance suggested that multicollinearity is a marginal concern.

The final portion of this chapter offered possible explanations for the unexpected results with respect to the third null hypothesis. They might be the result of a cultural change at the Naval Academy, the composition of the selection boards, or a phenomenon akin to the Hawthorne Effect.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. RESEARCH QUESTIONS REVISITED AND CONCLUSIONS

The overarching goal of this thesis was to conduct a thorough examination of the striper selection process at the United States Naval Academy. To achieve that goal, we posed four research questions in Chapter I. We now return to answering those questions based on the finding of the qualitative and quantitative analyses in the thesis.

1. How Does the Current Selection Process Work?

Chapter II reviewed and detailed the written guidance currently in force that governs the selection of stripers at the Naval Academy. Chapter III attempted to examine the process as it actually occurs by using qualitative research methods to survey, interview, and observe the decision makers involved in selecting those stripers, and then compared the "written" with the "actual."

The selection process largely functions as detailed in the Commandant of Midshipmen's written instruction with several minor variations and two notable ones. The first exception relates to the composition of the company and battalion selection boards. The written instructions provide exacting guidance relating to the use and membership of selection boards at these levels. In practice, however, board use and membership appear to be far more ad hoc in nature.

The second exception relates to the passing of selection criteria guidance from upper-level decision makers to lower level ones, specifically as it relates to the issue of volunteerism as part of the initial striper candidate selection process. Senior leadership specifically does not desire company officers to ask for volunteers, yet the vast majority of company officers do so. This may be a symptom of a chain-of-command communication flow problem; most of the Company and Battalion officers indicated that candidate selection guidance—formal or informal—does not flow very freely down the chain of command. This latter observation may be the result of senior commanders wanting to push as much of the decision making ability as possible to their subordinates without causing an undue influence.

2. What are the Written and Unwritten Selection Criteria to Become a Striper?

There is no formal, written documentation or guidance in place to detail what type of midshipman to consider for stripes. The above observation with regard to volunteerism, among other places, is evidence of this. However, there does appear to be a strong, consistent belief among the decision makers of what a striper candidate should "look like," which is likely based on the cumulative years of service and experience of the primary decision makers.

Using a qualitative approach, Chapter III proposed eight criteria of a potential striper that were of concern to decision makers. We divided these eight into three categories: desirable traits and characteristics, undesirable traits and characteristics, and demographic variables. The desirable traits included top military performance, good academic grades, and proven leadership ability. The undesirable traits included consistent conduct problems and a tendency to appear before the academic board. The demographics that are currently of concern to the decision makers are gender, ethnicity, and varsity athlete status.

The logistic regression model developed in Chapter V confirmed the qualitative data in Chapter III with respect to the desirable and undesirable traits. It also indicates that a high cumulative Military Quality Point Rating is the most important factor in the selection process. However, for the demographic variables, t-tests and our model suggest that women and minorities tend to be selected as stripers at a higher rate, while varsity athletes tend to select at a lower rate in this sample of the classes of 1999 through 2002. There is no conclusive statistical evidence to explain this, although older historic data suggests that the effect of race and gender were once opposite. Therefore, these observations may represent cultural trends, due to the construction of the membership of the selection board, or the result of some other phenomenon analogous to the Hawthorne Effect.

3. Using Multivariate Regression, Can We Model the Striper Selection Process Based on the Identified Criteria?

In Chapter IV, we matched the eight criteria identified by the qualitative data with archival data available from the Naval Academy's Office of Institution research to create variables to measure these criteria in a logistic regression model. The model included eight variables: CUMMQPR to measure military performance, CUMAQPR to measure academic performance/cognitive ability, BLTSCR2C measuring prior leadership experience, TDEMOS to measure a midshipman's conduct record, ACBDSCR to measure frequency and recency of appearance before the Academic Board, and the three demographic variables, FEMALE, MINORITY, and VLTRWNR. We grouped the variables to match the three generalized groupings discussed in Chapter III, which led to the formulation of three null hypotheses. We tested the hypotheses using likelihood ratio tests, and found that we could reject all three of the null hypotheses of no effect of the selected variables on striper selection.

Other "goodness of fit" measures also suggested our model was sound. The model had an overall classification success rate of 75.7%. The Hosmer and Lemeshow test further supported a strong model.

To answer this research question it appears that the model predicts striper selection well. We assessed the overall model performance and the tests of the three individual hypotheses. The goodness of fit statistics supports a successful model. Two out of the three hypotheses performed as expected, and there are several plausible explanations as to why the third did not. However, note that we have not attempted to identify other factors that may affect striper selection, but which have been omitted from our model.

4. What are the Strengths and Weaknesses of the Striper Selection Process?

To answer this final question, we must examine this thesis in its entirety. There are clear strengths in the selection process, and some relatively minor weaknesses. The

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biggest strength is that the selection process appears to select the midshipmen that the decision makers think they are picking. In simple terms, the process appears to work as designed and intended.

Another strength—which some might consider a weakness—may also be the lack of formal selection criteria guidance from the upper-level members of the chain of command to the lower level members. This practice seems to "push down" selection authority, allowing the Company Officers to use their judgment in selecting and recruiting those whom they believe to be the most capable leaders from their companies. Freeman (1950) argues that this is an essential part of choosing future leaders.

The weakness in this phenomenon is in the apparent lack of information flow. It deprives the upper-level decision makers of some measure of control over the initial pool of candidates. We provided evidence of this with the issue over the use of volunteerism by the Company Officers.

There is likely a similar strength/weakness relationship in our observations of selection board composition. The laissez-faire manner of allowing Company and Battalion Officers to construct their selection boards with whomever they choose allows them to best use their experience and resources to their advantage. However, relatively small deviations from printed instructions may eventually turn into the proverbial "chink in the armor," and it may gradually become accepted process to disregard formal guidance altogether.

B.   RECOMMENDATIONS

Having proposed answers to the four research questions, we now provide recommendations for making potential improvements to the striper selection process at the Naval Academy, and for further research in the area. We base our policy recommendations on the strengths and weaknesses identified by answering research Question 4 and some of the prevalent literature. The recommended changes are relatively minor in nature, since we conclude that the selection process works. We base our recommendations for further research on the shortfalls in our own research identified throughout this thesis.

1.   Policy Recommendations

Since we concluded in Question 4 that the biggest strength of the selection process is that it appears to be working just fine, it is challenging at best to justify changing policy. However, we observe that the practice, which is what works, does differ slightly from the policy. This suggests that there could be minor changes in policy so that it better matches the practice.

The first recommended policy change would be to allow the Company and Battalion Officers greater ability to construct selection boards in a manner of their choosing. To aid in the preservation of consistency across the brigade—a current major concern within the Brigade—the policy should not make selection boards an option. However, it should delineate certain *minimum* membership requirements as opposed to setting *exact* requirements. Consideration may also be given to the wording of the part of instruction that governs the board voting process, since it was observed (page 41) that at least the Brigade Selection Board did not use the process as prescribed.

The second recommended change relates to the communication of standards. Recall that we found there were no formal means of communicating intended minimum standards for striper candidates, yet such standards may actually exist at upper levels in the chain of command. Senior leadership should have the ability to provide certain guidelines for a candidate, but they should be able to do so without affecting the Company Officer's ability to draw on his or her own knowledge and experiences in choosing a potential striper. Therefore, it may be useful to have a formal means by which senior leadership can provide guidance in such a way that does not usurp a Company Officer's latitude in selection.   For example, part of the notice issued by the Commandant's Office each semester may include phraseology to the effect of "Company Officers shall draw on their experience in selecting whom they feel will be the best leaders of the brigade in the coming year, however the following minimal criteria should be met…." The drafters of the notice can then tailor the criteria each semester to express what the current concerns of the senior leadership at the time of writing. However, they should not be so limiting that, for example, it rules out all but the numeric top three or four candidates from each company; that would be selecting for their candidates for the

Company Officers. This idea is similar to the "precept concept" used by the promotion and selection boards routinely convened by the Bureau of Naval Personnel.

We take our final policy recommendation from the prevalent literature. The body of literature that advocates using peer assessment and feedback for identifying top performers and selecting leaders is rapidly growing (Zazanis, Zaccaro, & Kilcullen, 2001, citing 15 different studies relating to the subject). Mr. Hawkins reports a move to incorporate the peer-feedback system that is currently under development at the Naval Academy into the selection process (Personal Communication, December 2002). We highly recommend the formal inclusion of this system in the selection.

2.   Recommendations for Further Research

One potential consideration that may play into striper selection that we did not address was the nature of the personality of midshipmen. At one point during his interview, a paraphrase of a statement made by Captain Parker, the Deputy Commandant of Midshipmen, suggested that he would prefer an extroverted vs. an introverted person as a striper, at least in a unit commander position. Certain personality types are also probably more likely to volunteer for a striper position. Bartone, Snook, & Tremble (2002) would likely also advocate the use of personality measures in a leadership performance model as they did at the U.S. Military Academy. These points suggest that personality types, such as those measure by the MBTI, may also factor into who is selected as a striper. The Naval Academy records this data at least once for midshipmen when they are administered the MBTI during their first, or "Plebe," summer. We recommend repeating this study with the inclusion of personality type as part or all of a model for striper selection.

We limited our research only to the process used to select stripers. Captain Parker and others have indicated an interest in studying how effectively the stripers lead the brigade and the striper system helps to train midshipmen to be better leaders, and how the system may have changed over the years. For example, he believes that the expansion of the striper staffs have "diluted" the striper system. This is a topic worthy of further study, although it would likely not be very easy to tackle. One possible approach might be a

long-term longitudinal qualitative study involving interviewing and surveying former stripers to determine how their time as stripers may have benefited them. An alternate longitudinal quantitative approach might be to recreate Micheli's 1998 study, but instead look at how *quickly* stripers promoted as compared to their peers using groups of stripers from different periods.

We identified an unexpected outcome in the demographic variables used to predict striper selection, and proposed two theories that may potentially explain them. The first related to the personalities and construction of the selection boards. This would likely be difficult, although not impossible, to study further. The second theory is that the process is either evolutionary or cyclical. It would be possible to recreate this model for each class year and observe trends in the demographic variables. As we discussed however, not all of the data we used in this thesis are necessarily available before the class of 1999; it may then be necessary to wait for more data to become available. This may also couple well with a replication of this study if the Naval Academy elects to incorporate peer feedback into the selection process. Zazanis, Zaccaro, and Kilcullen (2001) would suggest that this be included in any performance model.

Reardon (1997) and Micheli (1998) both examined promotion success rates for officers who were stripers at the Naval Academy at various points in their Navy careers. Their midshipmen data however related to the classes of 1980 through 1985. Given that the analysis of the more recent data in this thesis is notably different in some areas from theirs, our final recommendation is that it may be worthwhile to repeat their research once a more recent cohort of Naval Academy graduates has had an opportunity to select for their 0-4 and 0-5 promotions.

Finally, it would be worthwhile to study the striper selection processes at the other U.S. service academies as well.

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APPENDIX A: INTERVIEW PROTOCOL FOR DEPUTY COMMANDANT OF MIDSHIPMEN

13 February 2003

MEMORANDUM

From: LT Jason P. Fox, LEAD Program, United States Naval Academy
To: Deputy Commandant of Midshipmen, United States Naval Academy

Subj: READ-AHEAD FOR THESIS RESEARCH INTERVIEW ON 20 FEB 03

1. Thank you in advance for taking the time from your schedule to grant me this meeting. I have provided some basic background information concerning my thesis and the questions I intend to ask in order to help you prepare for my interview.

2. My thesis is essentially a program analysis, and has three main points. First, I am seeking to determine exactly what the procedure that is in place to select the brigade stripers. Second, I wish to determine the most desirable personal qualities in the potential stripers. Finally, using data from the Department of Institutional Research, I will construct a mathematical model that aims to evaluate how well those selected as stripers meet those desired personal qualities. I am meeting my first objective primarily by conducting surveys and interviews of various components of the Commandant's Staff. The principal purpose of this interview is to address my first and second objectives from your point of view.

3. Following are my intended interview questions:
        a. Please describe the procedures of the brigade striper board.
        b. Do you generate precepts for the board before it begins the selection/assignment process?
        c. What method do you use to ensure that there are no obvious biases in the striper slate? At what point in the selection process does this occur?
        d. Please discuss the personal qualities you are looking for in the brigade four-stripers and above.
        e. How do you communicate those qualities to your staff and those picking the nominees?
        f. How effective is this process, particularly as is relates to meeting the qualities discussed in question d, above?

4. Please feel free to contact me via email at jfox@usna.edu if you have any questions or if I can be of further assistance.

Very respectfully,

J. P. FOX

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APPENDIX B: COMPANY OFFICER SURVEY

Please answer the following questions as candidly as possible concerning your company's candidates for 1st and 2nd class out-of-company striper positions. I am concerned with fall and spring stripers only; please do NOT consider the Plebe Detail positions in your responses. All responses will remain confidential and I will remove included names immediately.

1. Has your Battalion Officer ever given you any guidance in advance with respect to the qualities he or she is looking for in potential striper candidates, yes or no?
Yes.   No. (if "yes," continue to 1a; if "no," skip to 2)

    a. List the indicated qualities.

    b. How were they communicated to you (spoken, email, etc)?

2. List the qualities YOU look for in potential stripers [if different from what you answered in 1a].

3. Address the method you use to select the nominees from your company by answering the following questions:

    a. Do you ask for volunteers, yes or no?   Yes.   No.

    b. Do you use a company selection board, yes or no?   Yes.   No.

    c. If "yes," then list who sits on your board.

    d. Do you fill all of your available slots, yes or no? Yes.   No.

    e. If "no," please briefly explain why not.

    f. Are there any "red flags" that you look for in a Midshipman's record that would immediately remove them from consideration, yes or no?   Yes. No.

    g. If "yes," please list them.

4. Do the qualities you look for in a Company Commander differ from those you look for in potential stripers, yes or no?   Yes.   No.

    a. If "yes," please describe how they differ.

This concludes the survey. Thank you for taking the time to assist me in preparing my thesis.

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APPENDIX C: BATTALION OFFICER SURVEY

Please answer the following questions as candidly as possible concerning your battalion's candidates for 1st and 2nd class striper positions. I am concerned with fall and spring stripers only; please do not consider the Plebe Detail positions in your responses. All responses will remain confidential and I will remove included names immediately.

1. Have you ever received guidance in advance from above concerning what qualities to look for in potential striper candidates, yes or no?   Yes.   No.
(if "yes," continue to 1a; if "no," skip to 2)

      a. List the indicated qualities.

      b. How were they communicated to you (spoken, email, etc.)?

2. Do you provide similar guidance in advance to your company officers, yes or no?   Yes.   No. (if "yes," continue to 2a; if "no," skip to 3)

      a. List the indicated qualities.

      b. How do you communicate them (spoken, email, etc.)?

3. Address the method you use to select the nominees from your battalion by answering the following questions:

      a. Do you use a battalion selection board, yes or no?   Yes.   No.
      (if "yes," answer b, c, and d; if "no," skip to e)

      b. List who comprises your board.

      c. Do you ask any standard questions at your board, yes or no?   Yes.   No.

      d. If yes, please list them (they will NOT be made available to Midshipmen).

      e. Are there any "red flags" that you look for in a Midshipman's record that would immediately remove them from consideration, yes or no?   Yes.   No.

      f. If yes, please list them.

This concludes the survey. Thank you for taking the time to assist me in preparing my thesis.

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